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#### NOISETTE.

The original of this group is stated to have been a cross between the Musk-rose and the common China, raised by the gardener whose name it bears. The varieties bespeak plainly enough their origin in the crowded trusses of small, very double flowers they produce; and some, Aimée Vibert, for example, in their distinct musk-like odour. Some are all but scentless. They are almost always in blossom, but in the height of their beauty perhaps in February.

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6. WHITE NOISETTE.—A small bush; throws up continually new shoots, which produce great densely-crowded heads of small white faintly-fragrant flowers, forming one entire mass of white blossom; requires close pruning: branches which have flowered should be immediately cut in; a very common Rose here; propagated easily from cuttings; plants need often to be renewed.

7. CAROLINE MARNIESSE.—A plant of straggling habit, produces clusters of small pure-white flowers, with the crowded petals lapping completely over, somewhat resembling little Ranunculus; propagated easily by cuttings laid down under shade of a low bush in November.

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The following comprise those given in the English lists, the introduction of which into India might be reckoned upon as certain of success.

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#### TEA-SCENTED NOISETTE.

The Roses of this group are usually combined with those of the last. They are however in many respects very distinct. This is at once discerned in the extended growth of their stems, their very much larger flowers, their Tea-like scent, and the smaller number of them borne in the truss. They are magnificent Roses, and, as from their origin might be concluded, well suited to the climate of India, as witnessed in the long established favourite Solfaterre.

1. SOLFATERRE.—Very common in the gardens about Calcutta; a plant of very extensive growth, requiring a stout bamboo trellis for its support; produces large handsome pale-lemon flowers, of strong Tea-fragrance, at nearly all times of the year. The young stems, when mature, should be cut back a couple of feet, and the side-shoots, which then break forth, will produce flowers. Apt to become crowded with small barren wood in the centre, which should be cut clean out; requires plenty of water in the dry season; propagated usually by layers, but cuttings also will strike freely. Mr. Errington does not consider this the true Solfaterre, of which plants have lately been received from England, but an inferior Rose. To me the difference is imperceptible.

2. RAJAH—(LAMARQUE ?).—A splendid Rose, in every respect

similar to the last, except that the flowers are somewhat paler, and perhaps rather larger.

3. JAUNE DESPREZ.—A new Rose in the Agri-Horticultural Society's Garden ; flowers varying between buff and red, fragrant ; thrives and blossoms abundantly here, but the shoots are given to die back.

4. (CANINA BORBONICA.)—One of the most beautiful, though one of the commonest and oldest Roses in Calcutta ; produces in greatest profusion large, handsome, pendulous, very double, though not well-formed, creamy-white flowers, with apricot centre, relieved most agreeably by the very peculiar and distinct yellow-green of the foliage ; benefited by liberal pruning ; considered difficult to propagate by cuttings. What the proper name of this Rose is I am at a loss to say. I conceived it might be Triomphe de Bolwyller. Canina Borbonica (misprinted evidently for Chinensis Borboniana) was the name originally bestowed by Redouté on Rose Edouard. How in Calcutta the name became transferred to this Rose it is now impossible to tell.

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#### MUSK-ROSES.

1. *Rosa moschata*—*Séotée*.—Botanists seem to have decided that, if not actually identical with, this is only a variety of *Rosa Brunonii*, a wild Rose of the Indian hills. Professor Koch says they are alike but for the hairiness of the latter. As found in the gardens of India, the Musk-rose is in general a dwarf plant, but its ordinary height elsewhere is stated to be six or seven feet. It is said that in Persia trees of it have been seen as much as thirty feet high. It produces small flowers, with narrow, ill-formed, dirty white petals, and in the present

day possesses little interest as a garden plant, except for its peculiar, though not very strong fragrance, which, as its name denotes, is thought to resemble that of musk.

### Rosa Lyellii.

#### ROSE OF THE DOON.

#### Koozea.

A plant of extensive growth, common in the Upper Provinces, but not met with, that I am aware of, near Calcutta : bears large handsome double-blush flowers.

### Rosa microphylla.

A native of the hills of India ; forms a large compact bush, with dense, very pretty, small-leaved foliage ; flowers double, well-formed, blush, with carmine centre, quite scentless ; much adorned by the large green, prickly calyx that surrounds them.

#### CLIMBING ROSES.

None of the Roses belonging to either of the Boursault, Ayrshire, or Evergreen groups, which as climbing Roses, for their bright foliage and rich profusion of flowers, form in summer so conspicuous an ornament of the English garden, have, if ever introduced, been able to maintain a footing in India. It is upon the whole to the Tea-scented Noisettes that the gardens of Bengal at least must be indebted for their climbing Roses. The training, however, and pruning I prescribe, is applicable, I believe, for climbing Roses indiscriminately. But it must be borne in mind that this does not apply to those of the Hybrid Perpetual Roses that are sometimes trained to a great height as Pillar Roses. They are none the more climbing Roses for being so trained. The property of all *true* climbing Roses is to send forth stems of great length, towards the ends of which shoots are emitted, which bear the flowers. If, then, these stems are much shortened, the lower portions of them which remain emit shoots, but these shoots bear no flowers. The mode of proceeding with them will then be as follows :

1. Insert bamboo stakes in a circle round the plant. Cut out clean away to the ground all but three or four of the aforesaid

long stems, train these three or four stems from stake to stake in a spiral form, and allow them to grow to their fullest length.

2. Cut out all sprays and small wood at the bottom of these stems, so as to keep them clear of wood a foot or two from the ground. This will render the plant accessible for applying surface-dressings, which are of the utmost benefit.

3. When the stems become old, and show signs of debility, cut them out, and train new ones in their place.

4. The only pruning required, if any, will be just to take off about six inches from the end of the stem ; this will give greater strength to the flower-shoots just below.

#### Rubus.

*R. rosæfolius*.—A small pretty plant with bramble-like foliage, native of the Mauritius ; flowers resemble small, very compact, double pure-white scentless Roses ; very common in the Calcutta gardens, and very troublesome for the numerous suckers it throws up to a wide distance around.

#### Potentilla.

Plants of the several kinds of Potentilla may be raised from seed in October, and kept with no great difficulty through the following Hot season ; but the poor flowers they produce, if they blossom at all, are hardly worth taking the trouble for.

#### Geum.

*G. atrosanguineum*.—Bears large blood-red strawberry-blossom-like flowers ; but though raised easily from seed and kept from one Cold season to another, in the vicinity of Calcutta seldom or never blossoms.

#### Kerria.

*K. Japonica*.—A twiggy description of shrub, usually grown nailed to walls in England, but never rising to more than a foot or so high here. Flowers in the form of a ball, of moderate size, very double, and bright yellow ; not a very ornamental plant anywhere, and far from being so in this climate, where it thrives but indifferently.

#### Spiraea.

This genus contains the old familiar Meadow-Sweet of our

English fields, besides several beautiful cultivated species. We have but two in this country, and these, I believe, by no means among the most ornamental.

1. *S. corymbosa*.—Native of China; a small shrub of slender twiggy growth, about two feet high; very pretty, when in full blossom in the Hot season, with its small white flowers, borne in crowded compact heads on the ends of the twigs. The great detraction from the beauty of the plant is the bareness of leaves on the stems, except at their extremities.

2. *S. nutans*.—In general character very similar to the preceding; but with somewhat smaller and differently formed leaves; bears also similar flowers but is rather shy of blooming.

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### SAXIFRAGACEÆ.

#### *Saxifraga*.

1. *S. sarmentosa*.—A pretty herbaceous plant, with small round leaves, variegated above, and of a dark-red colour on their under surface; usually grown in England in pots suspended from the window-frame, whence it lets drop its delicate, thread-like, red runners in such profusion as almost to give the appearance of matted hair. Plants have been introduced into this country from China by Mr. Fortune, but they do not seem to thrive here, nor manifest any tendency to send out the runners, which constitute the principal feature of their beauty.

2. *S. sp.*.—An unnamed herbaceous plant in the Calcutta Botanical Gardens, bearing a strong resemblance to *S. crassifolia* of the cottage-gardens in England, having large, fleshy leaves, and bearing heads of small rose-coloured flowers; of not much beauty.

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### HYDRANGEACEÆ.

#### *Hydrangea*.

1. *H. mutabilis*.—This plant, which in the Channel Islands becomes a large, noble, bushy shrub, six or eight feet in height, is not uncommon in Calcutta, but is grown in a pot, and never attains to more than a foot and a half high, nor bears those magnificent trusses of bloom which render it so conspicuous an

object of beauty in Europe. It is by nature a marsh plant, and requires abundance of water, particularly at the period of its most vigorous growth in March and April, and is best placed in a pan of water. It requires a light soil, and to be kept in the shade. Sir J. Paxton says that "much of the success in the culture of the plants depends upon their being placed in a southern aspect before flowering, to ripen their wood and buds." The great difficulty, however, here is to induce them to make wood. Flowers in April and May. Propagated easily by division.

2. *H. Japonica*.—This plant differs from the last in the leaves being of a longer, more pointed form, and of a more verdant, fresher green. The central flowers also of each truss of blossom are fertile, while those of the last are all barren. The habit of the two species is precisely the same, as well as the mode of cultivation.

3. *H. Japonica, variegata*.—An exceedingly beautiful plant, with large cream-coloured leaves blotched with green. I brought down plants of this from Ootacamund for the Calcutta Botanical Gardens, as well as for my own, but they all perished in the Hot season, seemingly incapable of surviving the heat of the plains.

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#### LYTHRACEÆ.

##### *Heimia.*

*H. myrtifolia*.—A small, low, slender, unpretending shrub; bears in May numerous small, yellow, uninteresting flowers.

##### *Cuphea.*

*C. platycentra*.—A scanty, mean-looking shrub three feet high, with small ovate leaves; flowers small, irregular-shaped, pale dull-red, with two purple-black, heart-shaped, erect lappets.

##### *Ginoria.*

*G. Americana*.—A rather pretty shrub, three or four feet high, with small myrtle-like leaves; bears during the Hot and Rain seasons pretty moderate-sized purple flowers, succeeded in the Cold weather by small, shining, dark-purple berries.

### Grislea.

*G. tomentosa*—*Dhāree*—*Dhāo*.—A large shrub, or rather small tree, eight or ten feet high, with drooping branches, and rather coarse-looking foliage, but very handsome when in full blossom in February and March, presenting the appearance of a perfect shower of dazzling red, with its infinitude of small, tubular, scarlet flowers.

### Lawsonia.

*L. alba*.—*HENNA*—*Menhdee*.—A large shrub, sometimes growing to seven or eight feet high, with small neat foliage, much resembling that of a Myrtle; bears at the beginning and end of the Cold season numerous large compact panicles of small greenish-white flowers, which scent the garden with a delightful fragrance. A plant of considerable notoriety for the red dye which the leaves afford to the women of the East for staining their finger and toe-nails. Propagated easily from seed or cuttings.

### Lafōensia.

*L. Vandelliana*.—A small tree with foliage of a very neat and ornamental character; leaves oval, smooth, rigid, and shining, two and a half inches long; rather showy when in December it produces its abundance of large lagerströmia-like golden-yellow blossoms, with numerous long stamens projecting from them.

### Lagerströmia.

1. *L. Indica*.—An erect-growing shrub, three or four feet high, with smooth oval leaves, two-thirds of an inch long; bears in the Rains, in unbounded profusion, large panicles of rather small, fringe-petalled, rose-coloured flowers. There is a variety likewise with the flowers pure white, and one with them of a lilac colour. The three varieties grown together in a group, when in full blossom, form a most lovely ornament to the garden. In the Cold season it is entirely leafless, when it should be well pruned in; easily propagated either from seed, or cuttings.

2. *L. elegans*.—A large strong-growing shrub with large handsome leaves and flowers, about ten times as large as those of the preceding; a magnificent object when in full flower, with its

great compact panicles of light-purple blossom, telling finely upon its dark rich foliage.

3. *L. reginæ*—*Járul*.—A tree of considerable size, yielding blossoms somewhat similar to those of the last, but much inferior. Major Drury says of it:—"This is without exception, when in blossom, one of the most showy trees of the Indian forests. It is now commonly cultivated in gardens on the western coast, where the moist damp climate is most suitable for its growth and the full development of the rich rose-coloured blossoms. In forests near the banks of rivers it grows to an enormous size, some having purple flowers, and forming a most beautiful and striking appearance."

### CELASTRACEÆ.

#### *Euonymus.*

1. *Eu. garcinifolia*.—A small shrub, remarkably bright and sparkling when in full blossom in May and December. Flowers small, numerous, of a brilliant blood-colour. This is the only species of any interest; all others bear pale-green, inconspicuous, unattractive flowers.

2. *Eu. variegata*.—A shrub about three feet high, introduced by Mr. Fortune from China into the Gardens of the Agri-Horticultural Society, where it seems to thrive but indifferently, and owing to its unhealthy condition, perhaps, is not very ornamental. In a climate that suited it, its round, rigid, smooth, glossy, variegated leaves would no doubt render it a very handsome object.

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### SAPOTACEÆ.

The plants of this order are ornamental only for their foliage, the leaves being for the most part thick, rigid, smooth, and glossy, and very handsome.

#### *Chrysophyllum.*

C. Cainito.—A fruit-tree of considerable size, but grown occasionally as an ornamental shrub. The golden hue of the under

surface of its large laurel-like leaves contrasts very beautifully with the dark, rich, glossy green of their upper surface, especially when set in motion by the wind.

### Sideroxylon.

*S. inerme*.—A small shrub of handsome foliage, in general aspect very similar to a *Pittosporum*.

### Mimusops.

*M. Elengi*—*Bákul*—*Málsuree*.—A large timber-tree much cultivated in the gardens of the natives for its beauty, as well as for the delightful fragrance diffused by the numberless small pale-green flowers it bears in March. At the gardens of the Tâj at Agra several handsome trees may be seen, and also in the enclosed gardens at the palace of Deeg.

## AQUIFOLIACEÆ.

### Ilex.

1. I. *Aquifolium*—THE COMMON HOLLY.—Neither this nor any other species of Holly seems to succeed at all satisfactorily in the climate of this country, as most that have been introduced have survived only a few seasons. The *Acanthus ilicifolius*, however, bears so strong a resemblance to the Common Holly that many have no doubt mistaken the one for the other.

2. I. *Paraguayensis*.—MATÉ—PARAGUAY TEA.—A specimen of this famous plant is to be met with in the Gardens of the Agri-Horticultural Society, where it is kept merely as an object of curiosity; it is of no interest whatever in an ornamental point of view. The idea of cultivating it in this climate for any use to which it could be applied would be quite futile.

## APOCYNACEÆ.

### Allamanda.

■ genus of flowering shrubs of extreme beauty, mostly natives of Brazil; ornamental likewise for their foliage, with the leaves borne in a succession of whorls along the stem. Several species

have been introduced into the gardens about Calcutta, where they thrive admirably, but there seems some uncertainty with regard to the accuracy of the names given them. They are exceedingly easy of propagation by cuttings. It is stated that some of the species have been introduced into England by means of seed. In the locality of Calcutta I have never become cognisant of an *Allamanda* producing seed.

1. *A. cathartica*.—A rather large shrub of scandent and rambling habit; a superb plant, one of the commonest of the Calcutta gardens, as well as one of the choicest ornaments of the stoves in England; flowers very large, pure bright yellow, finely relieved by the rich deep-green foliage; unexpanded flower-buds of a bright pure yellow-green; in constant blossom during the Hot and Rain seasons; should be well cut in during the Cold season to keep it within bounds.

2. *A. Schottii*.—The plant so named in the Calcutta Botanical Gardens differs in no discernible way from the foregoing. But the plant pointed out to me in the public gardens of Bangalore with this name assigned to it, and which I have since met with in the garden of Baboo Jibbon Kissen Paul, of Hooghly, was a dwarf shrub, not scandent, with flowers not more than a quarter of the size of the foregoing, with the outer part of the tube of the corolla deeply marked with red, and the unexpanded flower-buds of a dark, dull chocolate red; quite different, however, from that described and figured in *Curtis* under the name.

3. *A. sp.* from Kew.—A plant so designated in the Calcutta Botanical Gardens, not to be distinguished from *A. cathartica*.

4. *A. nereifolia*.—Described in *Curtis* as "extremely different in habit from any described species, as well as in form of corolla, which is almost of a golden colour streaked with orange; panicles, with many flowers." A plant is stated to have been exhibited at the Calcutta Flower-show of 1857 from the garden of Mr. F. Pareira.

5. *A. sp.* from Java.—A plant introduced within the last few years into the Calcutta Botanical Gardens; produces truly magnificent flowers; when fully expanded as much as five inches across, pure bright yellow, with the throat coloured with faint streaks of chocolate; the large unexpanded flower-buds of a deep chocolate colour.

6. *A. violacea*.—Lately introduced.

**Melodinus.**

*M. monogynus*.—An extensively climbing shrub, with ornamental, bright, dark-green, lanceolate leaves; flowers not large, star-formed, like those of a Jasmine, pure-white and very fragrant; bears a fruit of the size and form of a moderate-sized apple, said to be eatable and agreeable.

**Rauwolfia.**

*R. canescens*.—A small erect shrub about two feet high; bears small, insignificant, whitish flowers, not at all ornamental except for the small pea-sized berries it is always bearing of different colours, according to their state of ripeness, green, bright-red, and black.

**Ophioxylon.**

*O. serpentinum*.—A very common small shrub, about two feet high, producing its foliage in crowded whorls on the summit of the stems; leaves narrow, lanceolate, smooth, shining green, about five inches long; bears nearly always its compact small corymbs of numerous small pure-white flowers on delicate coral-red footstalks. Sir W. Jones says of it:—"Few shrubs in the world are more elegant, especially when the vivid carmine of the perianth is contrasted not only with the milk-white corolla, but with the rich green berries which at the same time embellish the fascicles." This perhaps is higher praise than most would be willing to accord it. Easily propagated by division or by seed.

**Thevetia.**

*T. nereifolia*—*Zurd Kunél*.—So called from the great resemblance its foliage bears to that of the Oleander; a handsome small spreading tree, from eight to ten feet high; native of South America; constantly in blossom with numerous large, thimble-formed, bright-yellow flowers; bears in abundance large almond-like nuts, from which it is easily propagated.

**Cerbera.**

*C. fruticosa*.—A large spreading shrub, bearing large, hand-

some, lanceolate leaves, from among which nearly at all seasons the rose-coloured flowers, much resembling those of *Vinca rosea*, peep forth and sparkle very prettily. Propagated by cuttings.

*Tabernæmontana.*

1. *T. coronaria*.—Called *Chāndnee*, “Moonbeam,” by the natives, common in nearly all the gardens of India, and certainly as handsome a shrub as they could contain; from four to six feet high, with lanceolate, sharp-pointed, smooth, shining leaves, five or six inches long. Flowers large, double, pure enamel-white, borne almost constantly, and having a delightful appearance as they peer forth from the fine dark-leaved foliage. In the night-time, it is said, they emit a delicate fragrance; in the day they are quite scentless. Propagated easily by layers or cuttings.

2. *T. dichotoma*. A large handsome spreading shrub, occupying a great deal of room, with noble, broadly-lanceolate, rigid, yellow-green leaves, nine or ten inches long; bearing, scattered here and there, pure-white fragrant flowers, very similar to those of *Vinca alba*. Eve’s Apple, or Forbidden Fruit of Paradise, is the name given to the fruit of this shrub, from the resemblance it bears in size and form to a half-nipped or half-eaten small Apple, as well as from its being a native of Ceylon, where Paradise is supposed by some to have been situated. The fruit, delicious once, became, it is told, a deadly poison after having been tasted by Eve.

3. *T. recurva*.—An exceedingly handsome and ornamental small spreading shrub, with narrow, lanceolate, pointed, very wavy, polished, deep-green leaves, three to four inches long; bears during the Hot season a profusion of sparkling white flowers two-and-a-half inches across, the corolla consisting of five large flat lobes. Propagated by cuttings.

4. *T. densiflora*.—A small unpretending shrub, with the leaves borne in a crowded manner on the summit of the stem; bears in the Rains compact corymbs of very small white flowers; in no way ornamental.

5. *T. citrifolia*; 6. *T. amygdalifolia*; 7. *T. Wallichiana*.—These last three have nothing whatever to recommend them in an ornamental point of view.

**Vinca.**

1. *V. alba*.—A beautiful, though a very common, herbaceous plant, two feet high, with rich polished green smooth oval leaves, affording a fine foil to the vivid white, large, round flowers, which it continues to produce at all seasons. Raised from seed or by cuttings.

2. *V. rosea*.—MADAGASCAR PERIWINKLE—OLD MAID.—In all respects like the preceding, except that the flowers are of a rose colour, and the stems stained with red. When in full blossom, as it nearly always is, a lovely plant. Raised from seed, which it bears abundantly. This and the preceding are grafted sometimes the one upon the other, it is said, with pretty effect.

3. *V. major*.—COMMON PERIWINKLE.—The familiar plant of the gardens and hedgerows in England; bears in March and February its pretty blue flowers, of the same size as those of the preceding. Occasionally met with, but by no means a common plant.

**Plumieria.**

1. *P. acuminata*.—SPANISH JASMINE—*Gool-i-cheen*.—A small tree, ten to twelve feet high; not ill-looking when in full foliage, with its large, lanceolate, smooth leaves, nine inches long and two and a half wide, borne crowdedly, towards the summits of the stems, but remarkably uncouth when the succulent, gouty-looking stems are destitute of leaves, as they often are in the Cold months; bears during the Hot and Rain seasons, at the ends of the stems, large corymbs of large, pure-white, exquisitely fragrant flowers, with the interior of their cup yellow. Propagated easily by cuttings. In the Cold season it occasionally yields a pair of seed-pods or two, but very seldom. In some gardens is met with a very pretty and interesting variety of this shrub, the unexpanded flower-buds of which are of a deep dull crimson colour. The flower when fully expanded has one-half of the under-side of its petals dull crimson, and the other half white. The borders of the petals curl upwards, and are beautifully edged with crimson. The interior of the flower is perhaps of a deeper yellow than the white variety.

2. *P. alba*.—Very similar to the preceding, except in being of more shrubby growth, with much denser and darker-coloured foliage. Flowers entirely white.

#### Parsonia.

*P. corymbosa*.—A very ornamental scandent shrub, about four feet high, with slender stems requiring the support of a trellis, and with rich dark-green foliage of oval, smooth, rigid leaves, one to two inches long; bears during all the Hot season beautiful closely-crowded corymbs of very small bright-crimson flowers. Propagated by layers.

#### Beaumontia.

*B. grandiflora*.—A truly magnificent climbing shrub, with strong woody stems; spreads over an immense space its dense foliage-curtain of noble, verdant, oval leaves, nine inches in length and four broad. Flowers trumpet-formed, resembling white Lilies, four inches long and three inches across, corolla expanding at the mouth with five roundish lobes, with a faint Lily-like scent, borne in large corymbs, and covering the plant with an entire mass of blossom from January to March. Of very rapid growth; a small plant in less than two years will ascend to the height of a lofty tree, or, trained upon bamboo poles, to the summit of the highest house, attaching itself firmly to anything it approaches with its powerful rope-like ~~tendrils~~. Propagated by cuttings or from seed.

#### Wrightia.

1. *W. antidysenterica*.—A small tree, with smooth obovate leaves; bears in the Hot season corymbs of pure white sweet-scented flowers.

2. *W. coccinea*.—A small tree with smooth oval leaves, sharp-pointed, four or five inches long; very ornamental in the Hot months, when bearing its corymbs of numerous flat, regular, five-lobed flowers, two inches across, of the colour and texture of scarlet velvet; presents also a curious appearance in the Cold season, with its large, long, cylindrical seed-vessels suspended among the stems.

### Alstonia.

*A. nereifolia*.—A small shrub, with neat foliage, much resembling that of the Oleander, but with the leaves somewhat broader; flowers of moderate size, star-like, pure-white, scentless, though unpretending in themselves, yet cheerful-looking opposed to the dark-green leaves. May be raised from seed.

### Nerium.

*N. odorum* — OLEANDER — ROSE-BAY — *Kunel*. — A large spreading shrub, six to eight feet high; throws up from the ground its numerous rod-like stems, upon the summit of which is borne its foliage of narrow lanceolate leaves, surmounted by a profusion of large cheerful flowers. There are several varieties of this delightful shrub, namely, those with pink, deep-red, white, and variegated flowers, both single and double of each. The double white, however, is a great rarity, though it is said to exist. This shrub may be considered the glory of the gardens of Upper India, where, during the Hot season, it thrives vigorously, and being always covered with blossom, scents the whole air around with its fine perfume. In the vicinity of Calcutta it thrives not nearly so vigorously. In the Deccan it may be often seen growing wild by the margins of rivers and jheels, where it looks extremely beautiful. The juice of the stem is said to be a deadly poison. Propagated easily by layers or by division. It also yields seed abundantly.

### Rhynchospermum.

*R. jasminoides*.—A native of China, but recently introduced into this country. A slender climbing shrub, growing to about six or eight feet high, with oval, pointed, deep-green, smooth leaves, about an inch and a half long; bears in the Hot season, in unbounded profusion, pure-white, sparkling, delightfully fragrant, salver-shaped flowers, nearly an inch across, with the lobes of the corolla curiously twisted; produced in corymbs. A most choice and ornamental plant; requires a trellis for its support. Propagated easily in the Rains by cuttings.

### Echites.

1. *E. caryophyllata* — CLEVE-SCENTED ECHITES — *Málutea*. — A

very extensively climbing shrub, with bay-like leaves; fastens itself upon and runs up trees to a considerable height, and during the Rains spreads out quite a curtain with the numberless sprays of its fragrant blossoms. Flowers white, of middle size, star-formed, with the petals twisted and irregular. Produces seed in the Cold season.

2. *E. lisianthiflora*.—A shrub of erect growth about five feet high; in full blossom all the Hot season, presenting at that time a very agreeable appearance with its profusion of rather large pure white flowers. Propagated by layers.

3. *E. picta*.—A small, slender, climbing shrub, cultivated only for its ornamental foliage, as here, I believe, it never flowers; leaves narrow, about four inches long, of a very dark green, prettily marked with the white and conspicuous midrib.

4. *E. cymosa*.—A small scandent shrub, ornamental for its leaves, which are lanceolate, three or four inches long, of a bright glossy green, often prettily marbled with the dark markings of the veins.

#### Pentalinon.

*P. suberectum*—SAVANNA-FLOWER—DEADLY-POISON-PLANT.—Native of Jamaica. A large climbing shrub with yellowish-green, verdant, oval leaves, two inches long: requires a stout high post or bamboo trellis for its support; in constant blossom during the Hot season with large yellow, showy flowers, very much like those of Allamanda. Sir J. Paxton says that in its native locality, “whilst other vegetation is perishing from drought this preserves the beautiful verdure of its leaves, and even continues to flower with the greatest vigour.”

#### Mandevilla.

*M. suaveolens*—CHILI JASMINE.—A slender-stemmed extensively-climbing shrub; bears large pure-white flowers, as much as three inches across, with five twisted lobes, delightfully fragrant. This plant is easily raised from seed, but is difficult to preserve any time in the plains, generally dying off before having flowered. “Blooms towards the ends of the shoots, which, therefore, should not be topped in growing time.”

**Dipladenia.**

Some of the species of this extremely choice and handsome genus have been introduced into this country, but have died off, seemingly unable to exist in the climate.

**Roupellia.**

*R. grata*—**CREAM-FRUIT-TREE.**—Probably so named from the abundance of cream-like juice it yields when wounded; native of Sierra Leone; a very extensively-rambling shrub, requiring considerable space for its full growth, though easily kept small by cutting in. The young stems are of a rich chocolate-brown colour, and the leaves lanceolate, pointed, from three to five inches long, smooth, of rich polished green, and rather thick. Flowers large, leathery, bell-formed, with expanded limb, white tinged with brownish-purple, with a crown of ten purple teeth in the throat, attractive just as they are expanding, but not very agreeable on near inspection when fully opened. From the high representations given of this plant, before its introduction to England, it appears to have caused some disappointment on its arrival there. Sir J. Paxton says of it, “it is difficult to imagine a flower with more uninviting appearance.” But this is doing it injustice: for though possibly not very ornamental in a stove, it undoubtedly has a handsome and imposing appearance in our gardens, where it thrives well. In the Cold season large plants will occasionally bear a seed-pod or two, but very rarely. Propagated easily by cuttings in the Rains.

**GENTIANACEÆ.**

This order contains many beautiful and ornamental plants; but not one, I believe, which can endure the climate of the plains of India.

**OLEACEÆ.****Olea.**

1. *O. fragrans*.—A small shrub four or five feet high, native of China, of very slow growth, but when in a thriving condition

rather ornamental, with its oval, pointed, rigid leaves, of a peculiar bluish tinge; blossoms from February to March with very small, pure white, delightfully fragrant flowers, borne in small bunches, situated closely upon the stems. Mr. Fortune says that the Chinese make great use of the flowers to perfume their teas, and that the scent they impart is more abiding than that of any of the flowers employed for the purpose. The plant is much cultivated in the Calcutta gardens, but is always considered choice and valuable from the great difficulty experienced in propagating it; layers are so long in striking that it is commonly full a twelvemonth before they are ready for removal. Mr. Ross, however, late head-gardener of the Calcutta Botanical Gardens, has stated\* that the better way is to strike cuttings in sand under a hand-glass, and that with careful shading and judicious watering young plants may be thus obtained, with tolerable certainty, within a much shorter time. Mr. Errington, however, head-gardener of the Agri-Horticultural Society, assured me that a very large proportion of plants so raised and potted off perished during the succeeding Hot season. Dr. Voight mentions a variety with red flowers; this I have never seen nor heard of.

2. *O. grata*.—A neat-looking shrub, in character of foliage hardly to be distinguished from the last, but far more thriving, and therefore more ornamental. The flowers possess no fragrance whatever.

3. *O. myrtifolia*.—An exceedingly agreeable and chaste-looking shrub, in habit, character, flower, and scent of the flower so much resembling the Privet of the English gardens, that it might be very readily mistaken for it; in blossom during most of the Cold season.

4. *O. Capensis*.—Likewise a pleasing shrub, very similar to the last, but not blossoming, as Dr. Voigt states, in the locality of Calcutta.

#### *Osmanthus.*

5. *O. ilicifolius*.—Lately introduced, and described as a very elegant evergreen Japanese shrub, with holly-like leaves.

#### *Syringa.*

6. *S. vulgaris*.—THE LILAC.—I have never heard of the existence

\* In a communication to the 'Journal of the Agri-Hort. Society.'

of this old familiar flowering shrub of the English gardens in India : undoubtedly the climate must be utterly unsuited to it ; for it can hardly fail of having been at some time introduced.

### Forsythia.

*F. viridissima*.—A small shrub of spreading habit, native of China, where, when in full blossom, it is said to be a most beautiful object ; blossoms in January, when the plant is quite leafless, with flowers very similar to those of the Yellow Jasmine, but from the scanty way in which they are produced upon the bare stems, the plant, in this country at least, is not particularly attractive. It is said to be benefited by being transplanted, and that it is easily propagated by layers or cuttings.

## SOLANACEÆ.

### Cestrum.

1. *C. fetidissimum*.—A pleasing shrub about five or six feet high, but with leaves that have a detestable smell when bruised : bears, at different seasons of the year, drooping fascicles of small tubular flowers, in size and form resembling percussion caps, of a dingy lemon colour. It throws up an immense number of suckers which require to be continually removed, as they produce no flowers and only serve to weaken the plant, the flowers being borne at the ends of the old stems. It yields seed, and is easy of propagation by removal of suckers.

2. *C. aurantiacum*.—Mentioned as a very beautiful shrub, and the most ornamental of the genus ; is not met with, I believe, in this country.

### Habrothamnus.

*H. fasciculatus*.—A very choice and beautiful pot-plant, of shrubby habit, about three or four feet high, with soft rough lanceolate leaves, six or seven inches long ; bears in great profusion, during the Cold season, drooping bunches of deep-crimson flowers, much resembling those of a Heath. It is accounted a very greedy plant, requiring to be often repotted in large pots. It grows with great vigour in the Cold months ; but large old plants are almost sure to die off in the Rains.

The plants, I am told, however, are saved, if they be turned out into the open ground in some shady place. Still it is best to make sure of a stock of young plants, which are easily obtained from cuttings, for the following season.

#### Datura.

1. *D. suaveolens*.—A very large spreading shrub, with large thick flaccid leaves ; makes a splendid appearance when in full blossom in the Hot season, with its immense white sweet-scented flowers, of the size and shape of a cow-horn, the corolla expanded at the mouth with frilled edges. It does not yield seed, but is easily propagated by cuttings.

2. *D. sanguinea*.—A shrub of much smaller growth than the last, and leaves of a darker green ; flowers also smaller and more tubular, with the rim curled over, of a dull deep-red colour ; thrives well at Ootacamund, whence I brought down plants both for the Calcutta Botanical Gardens and for my own garden ; but they all soon perished, seemingly unsuited to the climate of Calcutta.

#### Solandra.

1. *S. grandiflora*.—A shrub of considerable size, with very large, oval-lanceolate, smooth, pale-green, rather wavy leaves ; bears in the Cold season great erect Cowhorn-shaped flowers with overlapping rim of a pure milk-white, turning afterwards to a creamy-yellow, their five ribs beautifully washed within with purple ; faintly fragrant.

2. *S. oppositifolia*.—A shrub remarkable for its large yellow-green glossy leaves ; bears in May flowers very like those of the common roadside *Datura*.

#### Solanum.

Of the large number of species which this genus contains, not more than three or four perhaps are worthy a place in the garden, or in fact are much better than mere weeds.

1. *S. coriaceum*.—A neat and ornamental small shrub about two feet high, with lanceolate, smooth, leathery leaves two and a half inches long ; bears numerous large, pale-purple flowers, succeeded in the Cold season by dark purple enamel-like berries of the size of a nutmeg. Propagated by cuttings.

2. *S. argenteum*.—A beautiful small shrub about three feet high with Oleander-like leaves of silvery hue, borne on the summit of the stem; bears during the Hot season numerous thimble-formed, pendulous, pale-lilac flowers. It is best to grow it in a large pot, for if planted in the open ground it becomes very troublesome on account of the numerous suckers it sends up for a great distance around.

3. *S. macranthum*.—A small spreading tree about eight or ten feet high, with very large leaves; nearly always in blossom, and very showy with its numerous immense, purple, potato-like flowers. Propagated by seed.

#### ASCLEPIADACEÆ.

##### *Cryptostegia*.

*C. grandiflora*—*Chábuluk-chhuree*.—A large overspreading and extensively-growing scandent shrub, throwing out twig-like stems of immense length, bearing in pairs oblong, pointed, smooth, deep-green leaves, from three to four inches long; rather unmanageable, and requiring an outhouse or a large strong trellis for its support. Its handsome and luxuriant foliage forms a fine foil to the very large, bell-shaped, bright, rich purple flowers which it bears during the Hot and Rain seasons. Propagated by cuttings in the Rains.

##### *Holostemma*.

*H. Rhéedii*.—A climbing shrub, with large heart-shaped, pointed leaves, five to six inches long; described as bearing in the Rains large clusters of large, thick, fleshy five-lobed flowers, of a beautiful mixture of green and white colours.

##### *Calotropis*.

1. *C. gigantea*; and 2. *C. Hamiltoniana*—*Mudár*.—These are too well known to need description. They are unquestionably very handsome flowering shrubs, and nothing but their extreme commonness in the jungul and by the wayside excludes them from admission into the garden.

##### *Oxystelma*.

*O. esculentum*.—A very slender-stemmed herbaceous, creeping

plant, with narrow linear leaves about five inches long; a common weed of this country, delighting most in swampy ground by the side of rivers; bears pretty little saucer-formed flowers of the size of an eight-anna piece, white without and rose-coloured and purple-veined within; troublesome to eradicate sometimes when once established in the garden.

### Gomphocarpus.

*G. fruticosus*.—A very graceful and ornamental small bushy shrub about three feet high, with small linear leaves; very handsome when in blossom in July with its prettily-drooping large umbels of pure-white flowers, displayed in great profusion. It bears a very curious bladder-like seed-pod of the size of a small hen's egg, covered with blunt thorns.

### Asclepias.

#### SWALLOW-WORT.

1. *A. Curassavica*.—RED HEAD—BLOOD FLOWER—BASTARD IPECAUANHA.—JAMAICA WILD LIQUORICE.—An herbaceous plant about two feet high, with lanceolate, rather downy leaves two or three inches long; very showy when in blossom in the Cold season, with its erect umbels of orange-and-yellow; moderate-sized flowers; bears in great abundance its seed in large curious, inflated pods, from which it is best to renew plants annually, throwing the old ones away.

When young the plants are very liable to be devoured by a particular kind of caterpillar that preys upon them. This should be searched for and destroyed. And when old the plants often become infested by a reddish-looking aphis or blight-fly, and have then a very unsightly appearance.

2. *A. Mexicana*.—A simple little unpretending herbaceous plant, about two feet high, with slender stems, naked till near the summit, where it bears decussate, very narrow linear leaves an inch and a half long. In blossom constantly through the Hot and Rain seasons with umbels of pretty, but not very showy small white flowers. Raised in my garden from seed from England.

3. *A. arborescens*.—A small herbaceous shrub, bearing handsome umbels of pure-white Hoya-like flowers. This I have had

in blossom in my garden, raised from seed brought from the Cape.

#### Tweedia.

*T. cærulea*.—A small herbaceous perennial, with leaves rather downy ; very pretty when in blossom with its flowers of the palest blue, in size and form like those of *Vinca rosea*. Sir J. Paxton says that, if trained to a pole and exposed to light, it yields flowers of a fine azure blue. Raised from seed, which it bears abundantly.

#### Pergularia.

*P. odoratissima*.—PRIMROSE or COWSLIP CREEPER—WEST-COAST CREEPER.—A very extensive climber, with heart-shaped pointed leaves of a dull-green colour ; bears bunches of flowers resembling those of the Cowslip, but of a dead, heavy, greenish-yellow, scenting the air when in blossom during the Hot months with most delightful fragrance ; not an agreeable-looking plant at any time, and therefore best planted in some situation a little out of notice. Bears in the Cold season thick cylindrical seed-pods, six inches long.

#### Rhaphistemma.

*R. pulchellum*.—A large climbing plant, with largish heart-shaped, pointed, smooth, flaccid leaves from four to eight inches long ; described as bearing large racemes of large, rotate, five lobed, straw-coloured, sweet-scented flowers ; a native of this country. Dr. Wallich says it is the largest flowering Asclepiad with which he is acquainted.

#### Stephanotis.

*S. floribunda*.—CREEPING TUBEBOSE.—Native of Madagascar. A twining shrub with handsome foliage of oblong, thick, shining smooth leaves, three inches long ; flowers with the tube about an inch long, swollen at the base, and having five spreading oval segments at the apex, pure-white, fragrant, borne in clusters during the Hot and Rain seasons ; one of the most choice and delightful plants our gardens contain ; bears sometimes, in October, a large seed-pod somewhat resembling a moderate-sized Mango. Propagated by cuttings, which should be put down in July or August in a pot of fine silver-sand, and be kept

covered with a hand-glass, and watered as they require it. By November they will become well-rooted ; they should not be disturbed, but allowed to remain just as they are during the Cold season, from which they are very apt to suffer, in some sheltered place. In the beginning of March they will begin to start into growth, when they should be potted off singly and kept well watered. On becoming larger they require a bamboo trellis.

### Cyrtoceras.

*C. reflexum*.—Native of Java. A small shrubby plant with lanceolate, wavy, flaccid leaves four inches long ; bears in August lax drooping umbels of a creamy-white ; middle-sized flowers, with pedicles an inch and a half long : considered by some a very choice and beautiful plant, but in my opinion not to be compared with some of the Hoyas. It thrives very indifferently in the locality of Calcutta, and is consequently a very rare plant there. Sir J. Paxton says it was introduced into England grown upon a large log of wood, of which decayed portions and leaf-mould seem highly favourable to its growth.

### Hoya.

#### WAX-PLANT.

The species of this curious and interesting genus are rather numerous, but not more than about four or five seem to thrive and blossom well in Bengal. Several are natives of Java : some of these are very beautiful, and have occasionally been introduced into Calcutta ; but either from want of sufficient attention being paid to them, or from their being ill-suited to the climate, they have in a short time died off.

Hoyas seem to succeed best in a material consisting of loose potsherds and broken brick, the interstices filled up with leaf-mould and moss, upon which, when water is poured, it will drain away, almost as through a sieve. Their roots love to cling around the potsherds, and being kept damp by the moss and leaf-mould, thrive with prodigious vigour.

It is very essential that their leaves be occasionally washed with a sponge, to keep them clean of dust and cobwebs, which are sure to accumulate upon them in a verandah. They produce their flowers in the Hot and Rain seasons, and have the singular

property of blossoming again upon the same footstalks upon which they had blossomed the year before. They are easy of propagation; a single leaf half-buried, stalk lowermost, in fine sand, will soon become a rooted plant. They require shade, and should be grown in pots to which a bamboo trellis is attached for their support.

1. *H. carnosa*.—A native of China; thrives well in this country; the most common and well-known of all the Hoyas, as perhaps it is one of the most beautiful; a vigorously-growing plant with thick oval, pointed, rich deep-green, shining leaves, feather-nerved, the under-surface of a pale-green, against which its blossoms, borne during all the Hot and Rain seasons in succession, are admirably relieved. Flowers in compact even-formed umbels of the most delicate flesh-colour, wax-like, chaste, and glistening. They possess none of the honey-like fragrance which several of the species have.

2. *H. bella*.—A native of Moulmein, with leaves somewhat larger than those of the Myrtle, but similar in form. Described in Curtis as “the most lovely of all the Hoyas; flowers more lively than and differently formed from those of *H. carnosa*, and most deliciously scented; the corolla of purer white and corona of a deeper purple, resembling an amethyst set in frosted silver.” It is often cultivated in England suspended in a basket, over the sides of which its long lax stems hang down, and have a beautiful appearance when in full flower. A rare plant in Calcutta, where it succeeds very indifferently.

3. *H. Paxtoni*.—Of this—often mistaken for the preceding, but differing from it in its leaves narrowing off to the end—Mr. Grote had several plants in his garden at Alipore in healthy condition, grown upon a log suspended in the shade, and fastened to it with Cocoa-nut fibre.

4. *H. Potsii*.—A rather extensive climber, with larger leaves than those of any Hoya I have seen, being as much as seven inches long and three-and-a-half broad, of a wedge-form, with three parallel nerves; flowers of a dull buff colour, not showy; thrives well about Calcutta, and is one of the species distributed by the Agri-Horticultural Society.

5. *H. mollis*.—A very extensively climbing plant; flowers thick, wax-like, with a slight purplish stain in the centre, borne in most beautiful compact umbels. Cultivated for distribution

in the Gardens of the Agri-Horticultural Society. A plant under the same name, but very distinct from this, in the Calcutta Botanical Gardens, bears pure white flowers with a thick, dark, linear, ray-like mark in the centre; not of much beauty.

6. *H. Simmondsii*.—A species in the Agri-Horticultural Society's Gardens.

7. *H. macrophylla*.—Native of Java; accounted a very noble species; has large, very thick, roundish-oval, three-nerved leaves. A plant or two is to be met with in the Calcutta Botanical Gardens, but it thrives very indifferently there, and is apt to die off.

8. *H. orbiculata*.—Native of Prome and Java: specimens in the Calcutta Botanical Gardens; seem to thrive moderately well there.

9. *H. longifolia*.—A curious narrow linear-leaved species, met with in the Calcutta Botanical Gardens, but not blossomed there I believe.

10. *H. coriacea*.—A native of Java, described in Curtis as "a climbing shrub with the habit of *H. carnosa*, and bearing umbels of yellowish flowers, having a white coronet with dark brown eye." The sharp-pointed feather-nerved leaf, as figured in Curtis, shows it to be a distinct plant from that issued under the same name from the Gardens of the Agri-Horticultural Society.

11. *H. viridiflora*.—Native of this country; a rambling membranaceous-leaved plant with insignificant flowers. A mere weed.

12. *H. imperialis*.—Native of the Moluccas; introduced from Madras, where it is said to thrive well in Mr. Grote's garden. A very handsome plant, perhaps the finest of the whole genus, with great smooth, fleshy, oval leaves; described as bearing flowers of a fine violet colour, protruding from their centre a staminal crown of yellowish white, and emitting a delightful fragrance.

13. *H. variegata*.—Has its leaves spotted with silver white, and bears flesh-coloured fragrant flowers; has been exhibited at the Calcutta Shows.

#### Ceropegia.

C. *Gardnerii*.—A very interesting, slender-stemmed, twining

pot plant ; bears in January singular Convolvulus-formed flowers with their mouths parted into five divisions, of a greenish-yellow colour, sprinkled with numerous purple spots. It is tuberous-rooted, and dies down after flowering.

#### **Caralluma.**

**C. fimbriata.**—A small pot-plant with fleshy, leafless, Cactus-like stems of the thickness of a man's finger ; flowers small, white and pink, curiously fringed with hairs.

#### **Boucerosia.**

**1. B. umbellata.**—A leafless plant, with fleshy angular stems like those of a Cactus, of the thickness of a man's thumb, about a foot high ; a very sprawling and ungainly object when out of blossom ; bears umbels of hexagonal flowers of the size of a shilling, purplish-brown, slashed with golden streaks, clustered together so as to form a ball of the size of a small Orange : very curious and interesting.

**2. B. crenulata.**—Very similar to the last as regards the heads of flowers it bears, but with stems of not a quarter of the thickness.

#### **Stapelia.**

##### **TOAD-PLANT—CARRION-PLANT.**

From what Dr. Voigt states it is evident that the Stapelia must be altogether unsuited to the climate of Bengal ; for out of more than sixty species introduced from the Cape of Good Hope by Dr. Carey, he says that none flowered, and that most perished during the Rain season succeeding their arrival.

#### **CORDIACEÆ.**

##### **Cordia.**

**C. Sebestena.**—A small tree about fifteen feet high, with disagreeable foliage of rough, coarse, large, oval-formed leaves ; young plants, however, in a healthy condition, with fresh verdant foliage, are very handsome, when in blossom during the Hot and Rain seasons with their trusses of large bright-scarlet, gorgeous-

looking flowers. Propagated by seed, or by layers, which take a very long time before they strike and are fit for removal.

### CONVOLVULACEÆ.

The species of this Order are very numerous, and comprise many plants producing flowers of exceeding beauty, annual as well as perennial. They nearly all thrive well in this country. There is, however, a considerable degree of sameness in them, insomuch that a selection of a few of the most beautiful only is desirable in a garden of limited extent.

#### *Porana.*

1. *P. volubilis*.—Native of the North of India; a most extensive climber, covering the side of a high wall or outhouse to almost any extent: blossoms in November, when its numberless light silver sprays of crowded flowers, each resembling a diminutive *Convolvulus*, have a delightful appearance, springing out of their abundant foliage.

2. *P. paniculata*.—Also an extensively scandent shrub, and exceedingly beautiful when in blossom in November; differs from the preceding in the very hoary appearance of its heart-shaped leaves, and in its sprays of numberless pure white flowers having a faint, but most agreeable perfume, somewhat resembling that of Lavender.

#### *Aniseia.*

*A. media*.—A pretty little creeper, with slender stems and foliage, about three feet high; bears in the Cold season numerous very pretty and delicate-looking middling-sized flowers of a primrose-yellow colour.

#### *Convolvulus.*

• *C. pentanthus*.—More commonly called *Ipomœa semperflorens*; an extensive climber, with small slender foliage: when in full bloom in the Cold season, trained over a trellis or garden railings, a most beautiful object, with its profusion of middling-sized flowers of the purest deep-azure-blue; a common plant in

gardens about Calcutta. Propagated by division, or from seed, which it bears in the Cold weather.

### Ipomoea.

1. *I. macrorhiza*.—A thick-stemmed, extensive, and rather unmanageable creeper, requiring some very powerful means of support; with large rough digitate leaves; flowers large, rose-coloured, very handsome, produced in October. Propagated by portions of the root, which is tuberous, and often of an enormous size.

2. *I. dasysperma*.—A pretty climbing plant with fine, rich, dense foliage, concealed in which, for the most part, are produced its moderate-sized pale rose-coloured flowers. Propagated from seed.

3. *I. Jalapi*.—The name formerly given to *I. macrorhiza*, now assigned to a rather stout, coarse-growing climber, with rough crimped leaves; issued from the Saharunpore Gardens, and bearing in the Cold season lovely flowers of the purest azure blue.

4. *I. Pes caprae*—GOAT'S-FOOT CONVOLVULUS—SEA-SIDE POTATO.—A wild trailing plant of this country, growing abundantly by the sea-side, with curious two-lobed fleshy leaves, in form like those of a Bauhinia; produces in the Hot season numerous large Rose-coloured flowers.

5. *I. vitifolia*.—A very extensive climber of rather slender habit, with leaves much resembling those of a vine; native of this country; bears, in February, large handsome golden-yellow bell-formed flowers.

6. *I. tuberosa*—SPANISH ARBOUR-VINE.—A handsome climber of very extensive growth, with large finger-formed, rich, glossy-green leaves; flowers large and beautiful, golden-yellow. Raised from seed.

7. *I. polyanthes*—AURICULA-FLOWERED IPOMOEa.—Bears bunches of small yellow flowers of little interest.

8. *I. ficifolia*.—Native of Buenos Ayres: described as tuberous-rooted, and bearing large dark-lilac flowers, which remain unaltered throughout the day.

9. *I. Tyrianthina*.—A tuberous-rooted climber, native of Mexico. Sir J. Paxton says, “The flowers are very large, brilliant purple,

and borne in great profusion ; ” and Dr. Lindley states that it is “ a splendid plant, superior to most of its allies.” I have not seen either this or the last in India.

#### Batatas.

1. *B. paniculata*.—A tuberous-rooted extensive climber, with large ornamental finger-formed leaves ; bears in September large trusses of very large pure purple flowers.

2. *B. edulis*—SWEET POTATO—*Shukar-Kundo*.—A tuberous-rooted trailing plant, with glossy verdant heart-shaped leaves ; bears handsome rose-coloured flowers.

#### Pharbitis.

*P. Leari*.—Native of Buenos Ayres ; a very superb creeper, one of finest of the whole order ; grows over a large extent of trellis, and produces a succession of large fine deep-blue flowers, very similar to those of *Ipomoea rubro-cærulea*, though not borne so profusely, all the year through. I have never found it produce seed, but the stems take root wherever they touch the ground, and thus plants are easily propagated.

#### Rivea.

*R. Bona nox*—MIDNAPORE CREEPER.—A creeper of strong woody habit, with round leaves ; blossoms in September, opening in the evening its large white flowers, which are rather flimsy and unattractive, but which emit a delightful carnation-like fragrance. Dr. Roxburgh says of it that “ in fact it is the Prince of Convolvulaceæ.” Produces seed in abundance.

#### Argyreia.

1. *A. argentea*.—A large-growing twining plant, with heart-shaped leaves, the under-surface of which is covered with bright silver-coloured silky down ; bears at the end of the Rains moderate-sized white flowers with a tinge of rose-colour.

2. *A. splendens*.—A twining plant of most extensive growth, with heart-shaped leaves, the under-surface of which has the same silvery appearance as those of the last ; bears in the Rains numerous pale-pink flowers. Dr. Roxburgh says of it, “ a most

beautiful plant, far exceeding every other species I have yet met with."

3. *A. cuneata*.—A scandent shrub, in character and flower wholly unlike either of the two preceding; leaves roundish, heart-shaped, and with no silvery down on their under-surface; bears at the beginning and end of the Cold season moderate-sized funnel-formed deep bright Tyrian-purple flowers. It is a native of the Mysore country, where it may be seen growing wild in every shady spot. Dr. Roxburgh observes of it: "This, when in blossom, is one of the most beautiful of the whole order; the large, very bright, deep-purple flowers make it particularly conspicuous amongst its own deep-green leaves, and this is much augmented by making it run over any other stout plant with deep dense green foliage." At the foot of the Nilgherries it produces seed in great abundance, but Dr. Wallich says he has never known it to bear a single seed in the Calcutta Botanical Gardens, and that moreover it is difficult to propagate by layers.

4. *A. nervosa*—ELEPHANT CREEPER—*Gau-puttu*.—An immensely powerful, shrubby, twining plant, with great roundish heart-shaped leaves; bears large rose-coloured flowers; quite unmanageable in a garden except where it can be trained up some tree, or over an outhouse. Raised from seed.

## POLEMONIACEÆ.

### Phlox.

One or two varieties of perennial Phlox, bearing respectively white and pink flowers, are now to be found tolerably common in Calcutta, and are in blossom the greater part of the year. The flowers borne in the tuft-like heads are very handsome. With me plants have succeeded better in the open ground than in pots. They are herbaceous, and are easily multiplied by division.

### Ipomopsis.

*I. elongans*.—A very beautiful biennial, with finely-cut leaves; bears handsome spikes of bright-scarlet flowers. Plants raised from seed sown in October, when they can be kept through the

Hot and Rain seasons, blossom prettily in the Cold weather ; but they are nearly sure to die off at the close of the Rains. In the North-West Provinces, however, I succeeded in preserving plants till they blossomed.

### Cobæa.

*C. scandens*.—A rather extensive and very ornamental climber, with fine glossy, finger-formed foliage ; flowers very large, bell-shaped ; on first opening of a greenish-sulphur colour, turning some time afterwards to a fine deep purple, and then remarkably handsome. The seeds are usually sown in October with the annuals, and if they germinate, as about one or two out of a large number may do, the plants must be carefully kept through the Hot season till the following Cold weather, at the end of which, in March or April, they will come into blossom. They require large pots, to which a trellis of split bamboo is attached for their support. The mode of cultivation recommended in England is that the roots be “limited to some space filled with lime and brick rubbish, in which the plant blossoms liberally, and of a brighter colour.” It is very difficult, I understand, to keep it alive through a second season.

## HYDROPHYLACEÆ.

### Wigandia.

These, which may be raised from seed from England, are described as majestic perennial plants, with large ornamental undulating foliage. *W. Vigieri* and one or two others have been introduced.

## PLUMBAGINACEÆ.

### Statice.

*S. duriuscula*.—A small herbaceous perennial, mentioned by Dr. Anderson as bearing in the morning, during the Hot season, an abundance of pale-pink flowers, which drop off in the afternoon.

*Armeria.*

*A. cephalotes*—THRIFT.—A dwarf, herbaceous, edging plant, with narrow grass-like leaves; bears large heads of rather large, handsome, rose-coloured flowers; thrives well at Ootacamund, but is not met with, that I am aware of, in the plains.

*Plumbago.*

1. *P. Capensis*.—A small prostrate growing shrub, with foliage arranged in a succession of whorls of five unequal lanceolate leaves, from half an inch to two inches long; one of the commonest as well as one of the most ornamental plants of our Indian gardens; bears in the Hot and Rain seasons a profusion of pale azure-blue flowers of the same size and form, and arranged in the same manner as those of the Phlox; is benefited by being pruned in the Cold season.

2. *P. Larpentae*.—A native of China; much resembles the last, but produces flowers of a much finer and deeper blue. Plants have at various times been introduced into this country, but have not long survived, being seemingly unsuited to the climate.

3. *P. rosea*.—A small shrub, with prostrate stems; native of this country; bears, in the Cold season, crowded racemes of moderate-sized pale, pinkish-scarlet flowers, not unlike those of the scarlet Ixora, exceedingly brilliant and beautiful. The beauty of the plant, however, is much impaired by many of the leaves appearing generally in a decayed condition; requires shade and moisture. Propagated by cuttings in the Rains.

4. *P. Zeylanica*.—A small, slender, not very pleasing shrub, about three feet high; bears at nearly all seasons racemes of small white sparkling flowers, very clammy and disagreeable to the touch; bears seed in abundance.

*PRIMULACEÆ.**Primula.*

1. *P. vulgaris*—PRIMROSE.—I have never seen this plant in India. One of our principal amateur gardeners in the vicinity of Calcutta told me he had taken every possible means he

could think of to cultivate it in his garden, but in every instance without success. In the 'Journal of the Agri-Horticultural Society' I find it stated by Captain Hollings that they had "the English Primrose in magnificent blossom at Lucknow on the 30th August, 1844."

Var. *Polyanthus*.—This I have seen only at Ootacamund, and thriving but very indifferently even there.

2. *P. veris*—COWSLIP. 3. *P. Auricula*.—These two plants are, I believe, utterly unknown in India; and the attempt to introduce them would, I make no doubt, only result in complete failure.

### Cyclamen.

#### SOWBREAD.

A genus of small bulbous plants, bearing pretty, delicate, shuttlecock-like flowers: rarely, if ever, met with in the plains of India, nor in the least likely to be cultivated here with success.

### MYRSINACEÆ.

#### Mæsa.

*M. racementosa*.—A rather large tree, suited only for a garden of great extent; very beautiful in the month of February when in full blossom, with its unbounded profusion of large sprays of very small pure milk-white flowers.

#### Ardisia.

1. *A. solanacea*.—A large shrub, native of India, from four to five feet high; in every respect beautiful, in foliage as well as in flower. Leaves oblong, pointed, smooth, glossy, somewhat succulent, four to six inches long; bears at nearly all seasons compact corymbs of pretty rose-coloured flowers, arranged somewhat in the manner of those of the *Hoya*, in form like those of a Potato, having a fine effect, relieved by the dense verdant foliage. The flowers are succeeded by ornamental bunches of small, black, shining berries.

2. *A. crenulata*.—A shrub much of the same character as the last; bears also very similar flowers, but of a whitish colour, and

not nearly so showy. The ornamental character of the plant mainly consists in the beautiful rose-coloured berries by which the flowers are succeeded.

3. *A. umbellata*.—A large shrub like the two preceding ; bears corymbs of dull white flowers, succeeded by an unbounded profusion of black berries of the size of a pea, in the Cold season, when it has rather an ornamental appearance.

4. *A. paniculata*.—A large shrub quite distinct in habit from either of the preceding, having somewhat of the aspect of a Dracæna. It sends up long bare stems about ten or twelve feet high, from the summit of which its large lanceolate leaves, from six to twelve inches long, spread forth, and from among these project large, long, pink-stalked, plume-like panicles of numberless small pale-pink flowers. Blossoms principally in February and March.

#### *Jacquinia.*

1. *J. ruscifolia*.—A very large round bushy shrub, four or five feet high, with narrow lanceolate leaves, from one-and-a-half to two inches long, ending in a needle-like point ; bears in the Hot season a great profusion of small, star-like, bright-orange, rather pretty flowers. The whole shrub is of a dark sombre hue, not very agreeable. The wood is exceedingly hard, and the plant is rather difficult of propagation.

2. *J. aurantiaca*.—Is in most respects very similar to the last, except in having somewhat larger leaves.

#### JASMINACEÆ.

##### *Jasminum.*

##### J A S M I N E.

A very numerous genus, a few of the species of which claim admission into every garden, some for the fine fragrance of their blossoms, and some for their sparkling beauty when covered with their numberless white, star-like flowers. Some two or three have foliage for which alone they may be considered ornamental; but several are very coarse-looking shrubs, and far from attractive, except when in blossom. These latter it is well

to prune in closely after flowering, and keep as small and compact as possible. Many are native of the hills of India, though thriving well in the plains. All are propagated easily by cuttings or layers during the Rains.

1. *J. angustifolium*.—A small shrub with long twig-like stems, along which grow pairs of small oval, pointed, glossy leaves, about an inch in length; bears in the Hot months, in continued profusion, small white, star-like, exquisitely fragrant flowers. A delightful plant for perfuming the verandah during the time it is in bloom. Dr. Roxburgh says of it, “It is one of the most beautiful species of Jasmine I know. It is constantly covered with leaves, and their bright, shining, deep-green colour renders it always beautiful, and particularly well adapted for screening windows, covering arbours, &c.”

2. *J. approximatum*.—An unattractive shrub but for the curious spider-like flowers it bears in March, with narrow, white, thread-like lobes, more than an inch long, quite scentless.

3. *J. arborescens*.—A tree about ten or twelve feet high, with ovate, cordate, acuminate leaves; very showy in the Cold and beginning of the Hot season, when loaded with its large corymbiferous panicles of large white fragrant flowers.

4. *J. auriculatum*—*Jooee*.—A small twining shrub, having large heart-shaped leaves, with a pair of minute leaflets on their footstalks; bears in April numerous middle-sized, white, star-like, very fragrant flowers.

5. *J. Azoricum*.—A large bushy shrub, with soft downy stems and heart-shaped leaves; remarkably handsome in the month of February, when it bears in great profusion its large crowded heads of scentless flowers, the petals white inside and delicately tinged with red on the outside.

6. *J. candidum*.—A shrub with narrow lanceolate leaves two or three inches long; bears in the Cold season large white, five-lobed, periwinkle-like flowers, without scent.

7. *J. caudatum*.—A not very attractive shrub; bears in the Cold season middling-sized white flowers, with tubes an inch and a half long.

8. *J. chrysanthemum*.—Dr. Roxburgh describes this as a stout shrub, from eight to twelve feet high, with stems as thick as a man's leg, and foliage of dark-green unequally pinnate leaves; bears corymbs of ten to twenty-flowered large, bright-yellow,

delightfully fragrant flowers ; he further observes it is a native of Nepaul, and that "in the Botanic Garden it grows freely from cuttings, and becomes a stout, erect, ramous shrub, even a small tree, without the smallest tendency to lean or twine. Flowers more or less the whole year, but, like the other species, the proper season is April and May, at which time it is the most desirable Jasmine I have yet seen." I fancy this must have wholly disappeared from the Calcutta gardens, for I have never met with it.

9. *J. coarctatum*.—This Dr. Roxburgh describes as a ~~very~~ ramous shrub, with no tendency to climb, and says, "it may be readily known, without any other mark, by the great number of flowers which form the little dense corymbs."

10. *J. fruticans*.—A common and very beautiful small, twig-stemmed, twining shrub, with deep bright-green foliage of ternate leaves; leaflets oval, side ones half an inch, and terminal one three-quarters of an inch long ; bears at nearly all seasons five-lobed, bright-yellow, scentless flowers.

11. *J. grandiflorum*.—CATALONIAN or SPANISH JASMINE—*Játee*—*Chumbélee*—*Kuth-béla*—*Kund*.—A very pretty shrub with graceful pinnate foliage, the leaflets less than an inch long ; in blossom during the Hot and Rain seasons, with middling-sized, white, fragrant flowers ; resembles more than any other species in leaf, flower, and fragrance the common Jasmine of the English gardens. The flowers are much used for perfume in this country, retaining their odour when dried. When in a thriving condition a rather troublesome plant to keep in order, sprawling over a large extent of space, and emitting roots from its stems whenever they touch the ground. It may be trained upon a single stem, which will eventually become as thick as a man's wrist, supporting, at the height of two or three feet, a large bushy head. But thus trained it is very apt to be blown down by strong winds.

12. *J. heterophyllum*.—Of this Dr. Wallich observes, "this ornamental Jasmine is probably the largest of the genus, growing, as I am informed, to a considerable tree." Bears very numerous yellow, delightfully fragrant flowers, but not in the Calcutta Gardens, where, Dr. Voigt states, it has been more than thirty years without flowering.

13. *J. laurifolium*.—A twining shrub of handsome, verdant,

glossy foliage; leaves lanceolate, pointed, five inches long; bears in February lax corymbs of middle-sized, white, faintly-fragrant flowers.

14. *J. ligustrifolium*.—A shrub of low growth, ornamental if only for its privet-like decussate foliage; leaves oval, pointed, deep-green on their upper and pale on their under surface, leathery; bears in February, in vast profusion, small umbels of middle-sized feebly-fragrant flowers.

15. *J. nudiflorum*.—A trailing plant of slender habit, native of China. Flowers an inch in diameter, yellow, scentless, borne in great profusion upon the plant when destitute of leaves. Introduced by Mr. Fortune from Chusan in 1854 into the Agricultural Society's Garden, where it gradually died off; seemingly unsuited to the climate.

16. *J. officinale*.—The old familiar shrub, with light, graceful, pinnate, deep-green foliage, and cheerful sprays of fragrant white flowers, so commonly trained against the sides of houses in England; hardly, if at all, known here, except that a plant or two may be met with in the Calcutta Botanical Gardens. None were there in Dr. Voigt's time.

17. *J. pubescens*.—A moderate-sized branching shrub, with heart-shaped, deep-green, silky leaves, and the young branches very downy; bears during the Cold season principally, in unlimited profusion, crowded downy umbels of large, pure-white, fragrant flowers, at which time it is exceedingly ornamental; a very common plant. Dr. Roxburgh says it "is in flower during the Rains chiefly," which does not quite accord with my observation.

18. *J. Sambac*—ARABIAN JASMINE—*Bél*—*Béla*.—A bushy under-shrub, from two to two-and-a-half feet high, with ash-coloured branches, and shining oval leaves from four to six inches long and three inches broad; in a perfectly sound and healthy condition would undoubtedly be a handsome plant for its foliage alone; but, from some unassignable cause, scarcely a leaf upon it but is always found either cankered, or partially decayed, or half nibbled away; insomuch that, although indispensable in every garden for the exquisitely fragrant flowers it produces, it is best allotted a place in the background in an unfrequented spot. There are three or four varieties hardly to be distinguished by the leaves, except that they are rounder and

more heart-shaped, and more decrepit-looking, the larger and finer the flowers ; blossoms during the Hot months. Propagated by layers.

1st. The SINGLE-FLOWERED ARABIAN JASMINE.—Bears more profusely than the other varieties, and more fragrant flowers.

2nd. The DOUBLE-FLOWERED ARABIAN JASMINE—*Râebel.*

3rd. The GREAT DOUBLE ARABIAN or TUSCAN JASMINE—*Motiya*—*Môgra*.—Bears flowers like little white Roses ; in much request among the natives, and sold in great quantities in the bazârs, strung together as neck-garlands. In the flowers of this variety, possibly from the plant having been grown in a too-enriched soil, there is sometimes a curious propensity in the petals to become converted entirely into leaves.

19. *J. scandens*.—A scandent shrub, with oblong-cordate shining leaves, from one to six inches long ; bears in January and February corymbs of numerous pure white, delightfully fragrant flowers.

20. *J. simplicifolium*.—A spreading shrub, with exceedingly pretty myrtle-like foliage of oval highly-polished leaves, less than two inches long ; bears in the Hot season small white fragrant flowers.

21. *J. syringæfolium*.—A large twining bushy shrub, with glossy, rich, syriuga-like leaves ; bears in February corymbs of small white faintly-fragrant flowers.

22. *J. trinerve*.—An extensively-climbing shrub, with polished oval, sharp-pointed leaves, remarkable for the strong manner in which their three longitudinal nerves are marked ; bears in February flowers very similar to those of the last.

23. *J. sp.*.—An unnamed species very common in gardens about Calcutta ; a twining shrub, ornamental for its rich foliage of lanceolate, long, pointed, highly varnished leaves, from two to three inches in length ; bears constantly, but particularly in February, terminal corymbs of large, sparkling, white, very fragrant flowers, with the tube and under-side of two of the lobes purple. The calyces also, as well as the unexpanded buds, which are of a shining purple, have a very beautiful effect intermingled with the white flowers. One of the most delightful of the Jasmines, and especially pleasing when in the morning it perfumes the garden with its agreeable odour.

**Nyctanthes.**

**N. Arbor-tristis.**—*Hár Singhár*.—A tree about ten feet high, of most harsh and disagreeable aspect, common all over India : deserves some situation in the garden where it can be least seen for the boundless profusion of small, star-like, white flowers, with orange centre, which it bears each night from September to November, scenting at that time the atmosphere for a wide distance around with a delightful honey-like fragrance. The flowers all drop off in the morning, and the ground becomes perfectly carpeted with them. It is of very rapid growth, and the great long woody shoots which it bears annually should be cut completely in after flowering. It is propagated by seed.

**EHRETIACEÆ.****Heliotropium.**

**H. Peruvianum**—**HELIOTROPE**.—In most works upon gardening the Heliotrope is stated to be a shrub two feet or less in height. This gives a very poor and inaccurate notion of what the plant is in localities most congenial to it. At Ootacamund, for instance, in the Nilgherries, in some gardens it forms a fine compact verdant hedge, three or four feet high ; and in one garden in particular a plant might be seen as much as ten feet in height and forty feet in circumference in the form of a dense bush, loaded in its season with blossoms. In the plains of India, however, it never attains to a large size. It succeeds very well in the open border, but is sometimes apt to perish from excess of wet in the Rains. It blossoms in the latter part of the Cold weather with its trusses of small lilac flowers, so well known for their sweet Vanilla-like fragrance.

The most successful mode of cultivating this plant I have found to be as follows :—Sow the seed in October ; pot the seedlings off singly into large pots in which they are to remain permanently, and treat them in the way directed for producing the Tree mignonette ; that is, nip off the undermost leaves and buds as soon as they appear, and allow the plant to run up with a clean stem to about four feet high, supporting it with a bamboo stake. When arrived at that height allow it to form a head. Thus formed it will require no further trouble, as it will

show little tendency afterwards to give out shoots below. In September of the following season it will come beautifully into blossom full two months earlier than plants left to themselves would do. Three or four plants thus treated, and placed near the verandah, have a very ornamental appearance, and in the morning particularly perfume the air delightfully. It is easily propagated by layers in the Cold season. There are several varieties, between some of which there is no marked difference. But the one called *Voltaireanum*, not uncommon in Calcutta, is a very beautiful and distinct one. The young shoots are of a bluish-purple, and the unexpanded trusses of bloom of a very dark-purple colour; the leaves, also, are of a finer, darker green.

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### LAMIACEÆ.

#### *Ocimum.*

##### *Toolsee.*

Weedy-looking herbaceous plants, with little to commend them to a place in the garden except the agreeable and peculiar fragrance of their leaves; raised from seed, which they produce in abundance.

1. *O. sanctum*.—A small plant with leaves and stem of a dull red-purple, and small purplish flowers; common all over India, and well known for the sanctity in which it is held by the Hindoos; very apt to become a troublesome weed in gardens where it has once established itself, shedding its seed abroad, and producing young plants in profusion, which the mālees are very reluctant to destroy.

2. *O. Basilicum*, var. *glabratum*—**BASIL**—*Goolal Toolsee*.—Pleasing for the freshness of its rather large spear-formed, bright-green fragrant leaves.

#### *Orthosiphon.*

1. *O. incurvus*.—A small herbaceous plant, delicately beautiful when in full blossom in the Hot season; flowers small, pink, borne very numerously in long spikes. Propagated from cuttings or by seeds.

2. *O. stamineus*.—A very interesting and pretty little herba-

ceous plant; blossoms in June, with lavender-coloured flowers, curious for their long-projecting white stamens. Raised easily from seed.

#### Plectranthus.

*P. aromaticus*—BREAD-AND-BUTTER PLANT.—A low-growing, wide-spreading herb; bears small, pink, insignificant flowers; interesting only for its solid succulent leaves, which possess a pleasant aromatic fragrance. Every slip will readily strike.

#### Coleus.

1. *C. Blumei*.—An herbaceous plant, about two feet high, common in the Calcutta gardens; remarkably ornamental when in a healthy and thriving condition; the heart-shaped, saw-edged leaves being then of a clear yellowish-green, curiously blotched over with marks of dull purple; bears pretty spikes of small pale-blue flowers; must be renewed frequently from cuttings, as it becomes unsightly from age.

2. *C. scutellarioides*.—When well-grown a most delightful pot-plant; the stem, leaf-stalks, and leaf-veins of deep blood-red colour, which, mingled with the green of the leaves, gives it a very beautiful appearance, more especially so when in blossom with its spike of small pure azure-blue flowers. To be effective several plants should be grown in broad shallow flower-pots. Propagated easily by division.

3. *C. Verschaffelti*.—A very lovely plant, with saw-edged, thick leaves, which, together with the stems, when in a healthy condition and exposed to the sun, rival in glow and colour the richest crimson velvet. Most easily propagated by cuttings in sand. Of this there now exist perhaps some thirty varieties, distinguished with fancy names, according to the markings of their piebald leaves of red and yellow; now common in Calcutta.

#### Anisochilus.

*A. carnosus*.—A rather pretty herbaceous pot-plant; bears in September small lavender flowers on club-like heads.

#### Lavandula.

*L. Spica*—LAVENDER.—This delightful shrub is easily raised

from seed, and may be preserved for years, and grown to a considerable size ; but never, that I can learn, has been brought to blossom on the plains. On the Nilgherries plants of comparatively small size produce flowers abundantly.

#### Pogostemon.

*P. Patchouli*—*Pucha-pat*.—A coarse-looking, low, herbaceous plant, of no interest whatever in the garden, but for the peculiar strong fragrance of its leaves, which are sometimes gathered and laid in a chest with linen to impart to it a fine scent. Propagated easily by cuttings or slips.

#### Colebrookia.

Large uninteresting shrubs, with coarse sage-like leaves ; bear spikes of small insignificant flowers in March, but hardly deserve the room they occupy in a garden. 1. *C. oppositifolia*.—Flowers pale chocolate. 2. *C. ternifolia*.—Flowers pale green.

#### Mentha.

*M. auricularia*.—A small herbaceous plant; very pretty when in blossom in November, with small lavender flowers, on dense spikes, three or four inches long, and as thick as a man's little finger. Propagated by slips or cuttings.

#### Salvia.

Of the several handsome species of this genus few, it has been found, can endure the climate of the plains.

1. *S. splendens*.—A rather large herbaceous plant, very superb when in full blossom ; the large gaping flowers, together with their large bracts, being of a brilliant scarlet. Some care must be bestowed to keep it in a healthy and thriving condition, otherwise it looks unsightly, notwithstanding its handsome flowers. It soon becomes old and worn, and must be frequently renewed from cuttings. It requires shade, bearing indifferently much if any exposure to direct sunshine.

2. *S. angustifolia*.—An herbaceous plant with long slender prostrate stems, and of very untidy habit ; flowers small, pretty,

of a bright pure blue, produced in the Cold season; does not thrive well unless transplanted occasionally, which is best done in October.

3. *S. patens*.—A tuberous-rooted herbaceous plant; bears very large exceedingly beautiful flowers of the purest azure-blue; thrives well and is a common plant at Ootacamund, but is rarely to be met with on the plains, the climate of which it cannot long endure.

4. *S. coccinea*.—A small herbaceous plant, nearly always in blossom, with long erect spikes of small crimson-scarlet flowers, rather pretty, but not very showy. Raised easily either from slips or from seed.

#### Dracocephalum.

Herbaceous plants, remarkable principally for the aromatic fragrance of their leaves; particularly

D. Canariense—BALM-OF-GILEAD.—They are best treated as annuals, as they cannot be kept through the Hot and Rain seasons without more care bestowed on them than they deserve.

#### Phlomis.

P. leonurus—JERUSALEM SAGE.—A coarse-looking, bushy plant, about three feet high, rather gaudy when in full bloom in the Cold season, with its succession of large bright-orange flowers produced in crowded whorls along the stem. Propagated readily from cuttings.

#### Holmskioldia.

H. coccinea.—A large woody, spreading shrub, five to seven feet high; bears, in October and November, very curious flowers, in form like diminutive chamber-candlesticks, of a bright tawny-red, in boundless profusion, and is then a most beautiful object; requires to be cut closely in after flowering, to keep it compact and within bounds. Propagated from cuttings, or from seed.

#### Gomphostemma.

\*G. melissæfolium.—A small herbaceous plant; bears, in September, whorls of largish orange-coloured flowers; a coarse-looking thing at best, much resembling a Dead-nettle.

## VERBENACEÆ.

## Aloysia.

*A. citriodora*.—LEMON-SCENTED VERBENA.—Well known for the fine fragrance of its leaves: a very common plant in the gardens about Calcutta; bears, principally at the beginning and end of the Cold season, long, pretty, graceful spikes of very small milk-white, fragrant flowers. At Ootacamund it grows to become an immense shrub, six or eight feet high, with stem thicker than a man's arm, and remains constantly covered with a profusion of blossoms; plants, however, on the plains soon become decrepit and unsightly, and are rarely found more than two feet high before they die off. It is best, therefore, to renew plants by laying down slips or cuttings in the Cold weather. These should be put in a flower-pot filled with silver-sand, and kept in a shady place till they strike, which they do very readily. The young plants should then be potted singly, and by the Rains they will become large and handsome.

## Verbena.

Many of the species, hybrids, and varieties of this beautiful genus may be met with from time to time in the Calcutta gardens, but no dependence can be put upon their being found there permanently, as they are very apt, under any treatment whatever, to die off towards the end of the Rains. The losses, however, may be repaired by repeated sowings. If a packet of choice seeds be procured from England and sown in October, a good supply of plants of several varieties may be raised, which will come into blossom in March; and little difficulty will be found in keeping these till the following Cold season, during which they will blossom beautifully. Some two or three of the commoner kinds it may perhaps be found not necessary to multiply in this way, as they are of a robust nature, and young plants propagated from layers will survive the Hot and Rain seasons. From their trailing habit when put out in the border, Verbenas have usually an untidy appearance. Small circular or oval beds, each filled with a distinct variety, have a most charming and glowing effect during the very long time the plants last in the full height of their bloom.

The Verbena loves a soil well enriched with vegetable mould, but is impatient of wet. The beds in which it is planted should be slightly raised, so as to form low mounds. The tendency of the stems to throw out roots, wherever they rest upon the earth, sufficiently indicates that it requires frequent renewal of soil. The finer kinds never, that I have been able to discover, produce seed here.

1. *V. venosa*.—Readily known by its long, spear-formed leaves; bears dull-lavender flowers; a very robust but not an attractive plant.

2. *V. Bonariensis*.—A coarse-looking plant of upright growth, about three feet high; bears large clusters of very small uninteresting lavender flowers.

#### *Stachytarpheta.*

The following are raised from seed :—

1. *S. mutabilis*.—A large shrubby, herbaceous, rather coarse plant, with rough woolly leaves; flowers small, Verbena-like, bright-red, upon spikes sometimes two or three feet long; nearly always in bloom.

2. *S. Jamaicensis*.—An herbaceous plant with smooth, pale-green leaves; produces long spikes of small blue flowers; common, and of little merit.

3. *S. Orubica*.—An herbaceous plant distinguished from the last from its leaves being strongly veined and much crimped, and its flowers of a violet colour.

#### *Lantana.*

A genus of very beautiful flowering plants, remarkable for the strong sage-like scent of their leaves; nearly always in blossom during the warmer months; very rapid in their growth, and requiring repeatedly to be cut in, to keep them within bounds; easily propagated by cuttings or by seed, which they all bear freely.

1. *L. trifolia*.—A small common, somewhat coarse-looking plant, but, notwithstanding, rather pretty; blossoms with heads of lavender-coloured flowers, succeeded by berries of the same colour, bright like enamel, and as ornamental as the flowers.

2. *L. Selloviana*.—A small trailing plant, having altogether the habit and appearance of a Verbena, except for the bright little

blue berries it bears, and the scent of its leaves; flowers pale purple.

3. *L. Camara*.—WILD SAGE.—A large bushy shrub, four or five feet high; most rapid in its growth, with dark-green foliage of oval-notched, rough, powerfully-scented leaves; a common plant, often found growing wild, nevertheless exceedingly beautiful when in full blossom, as it nearly always is, with its numerous small, semi-spherical compact corymbs of orange and yellow flowers, succeeded by bunches of purplish-black seeds. There are a great many varieties, named according to the colour of the flowers they bear. ‘Le Bon Jardinier’ gives the names of as many as eighteen, of which some half-dozen, perhaps, are now cultivated here.

4. *L. nivea*.—In habit and foliage similar to the last; flowers white, tinged with lavender, with yellow centre; exceedingly delicate and beautiful.

#### Citharexylon.

*C. subserratum*.—A large handsome shrub, with much of the appearance of a Duranta, with dark-green verdant foliage; bears during the Rains long drooping spikes of numerous small, milk-white, very fragrant flowers.

#### Clerodendron.

A genus that comprises some of the most beautiful plants with which our gardens are adorned. Nothing can possibly surpass the loveliness of some of the species, particularly the seven first described below. The several species do not appear as yet to have been well determined. “Whoever,” says Dr. Lindley, “shall investigate the true distinctions between the beautiful species of Clerodendron with scarlet inflorescence, will find as ample a harvest of confusion to be reaped as he can desire.”\*

Some occasionally yield seed, and all may be propagated without difficulty by cuttings put down in the Rains, or from offsets or suckers, which most species send up abundantly. Sir J. Paxton observes: “Flowers are produced from the top of the current season’s shoots; therefore cut away wood of the previous season to within two or three buds of the base.”

\* Edwards’s ‘Botanical Register for 1844,’ p. 19.

1. *C. Kämpferi*.—A shrub about three feet high; flowers, borne in April, of a coral-crimson colour, in a large close mass, surmounting the head, of dark handsome leaves, in a very stately way. Sir J. Paxton says this is probably identical with 2. *C. fulgens*. It, as well as *C. pyramidale*, Mr. Errington tells me, is most easily propagated by cuttings of the young shoots, which soon become handsome plants.

3. *C. urticæfolium*.—A plant of lower growth than the preceding, but very similar in the manner of flowering. Its deep rich green leaves set off admirably the exquisite crimson-scarlet heads of flowers which rise above them in September.

4. *C. pyramidale*.—A shrub three or four feet high; bears, during the Rains, its flowers in enormous, dense, conical heads, presenting a truly magnificent appearance, though their colour is perhaps somewhat inferior to that of other kinds, being of rather a pallid crimson, not so brilliant as in either of the two preceding.

5. *C. hastatum*.—A tall-growing shrub, native of Sylhet; remarkable for its handsome spear-head-like leaves; flowers described as more than five inches long, greenish-white, with the mouth of the throat marked with fine purple dots, borne in April and May.

6. *C. splendens*.—A dwarf climber, native of Sierra Leone; blossoms in large close clusters of gorgeous crimson flowers; of exquisite beauty when in fine condition, as sometimes seen in the stoves in England. In the vicinity of Calcutta it can hardly be kept alive, and flowers, but very indifferently, in January.

7. *C. squamatum*.—The stems of this shrub rise naked from the ground about three feet, and then bear a parasol-like expansion of handsome, rich green, heart-shaped leaves, surmounting which rise the heads of blossom, resembling a mass of bright crimson coral. When in full flower, in April and May, no plant can surpass this in beauty.

8. *C. sp. from Mauritius*: in Garden of the Agri-Horticultural Society.—Somewhat resembles the last; blossoms in October, producing afterwards large, enamel-like, deep-blue seeds.

9. *C. fallax*.—A shrub about three feet high; produces, in March, pale violet-coloured flowers in large semi-spherical heads upon slender stems.

10. *C. fragrans*.—A vigorous, low-growing, large-leaved plant; flowers very double, like little roses, white tinged with pink, of exquisitely delicate fragrance, borne in large compact heads during all the Hot and Rain seasons; the leaves have a most disagreeable fetid smell; a very troublesome plant in the border on account of its throwing up suckers to a considerable distance around.

11. *C. infortunatum*.—A common roadside weed, very pretty, however, in February and March, when bearing its large heads of pinkish-white flowers.

12. *C. nutans*.—A tall shrub, about eight feet high; blossoms in November with an immense profusion of large white, tubular, hanging flowers, presenting a most lovely appearance.

13. *C. siphonanthus*.—A small shrub, native of India; blossoms in May, with a great profusion of white tubular flowers, three or four inches long, when the plant, with its long strap-like leaves, has a very chaste, handsome appearance.

14. *C. odoratum*.—A shrub of considerable size and spreading habit, requiring to be well cut in to be kept within bounds; produces in February and March an unlimited profusion of pretty pale-blue, sweet-scented flowers. There is a variety that produces white flowers.

15. *C. phlomoides*.—A shrub of some size, produces numerous small creamy-white flowers, very sweet-scented, particularly at night; a common jungul plant, hardly deserving admittance into the garden.

16. *C. serratum*.—A large-leaved, coarse, unattractive shrub, nearly always in blossom; flowers dull light-blue, not large nor interesting.

17. *C. Thomsoni*.—A most beautiful climbing plant, of recent introduction, bearing during the Rains, in great profusion, large corymbs of flowers, with white calyx, and corolla with purple tube and deep-crimson limb; succeeded by purple berries of the size of a pea, very ornamental with the white persistent calyx. Most easily propagated.

18. *C. speciosum*.—Lately introduced.

#### Duranta.

1. *D. Plumieri*.—A rather large woody, thorny, but handsome spreading shrub, native of the West Indies, about six feet high,

with bright-green foliage. Constantly in blossom with numerous drooping bunches of bright azure-blue flowers, succeeded by pretty orange-coloured berries of the size of a pea; a common plant, found in most Indian gardens. From its neat foliage and thorny nature it forms a very pretty garden hedge. Raised easily from seed or by cuttings.

2. *D. Ellisii*.—Differs in no very marked degree from the last, except that its flowers are white and its leaves somewhat smaller.

#### Petraea.

1. *P. Stapelia*.—A very extensive scandent shrub, with noble lanceolate leaves, native of South America: requires a stout framework of bamboo for its support; bears bright, pure azure-blue, large, star-like flowers, in large, elegant, wreath-like clusters; when in full blossom in October, and more especially in February, one of the loveliest objects in nature the eye could rest upon. It may be also trained as a standard. Propagated by layers, or from rooted suckers, which it not unfrequently sends up.

2. *P. erecta*.—Except in its more upright habit of growth, the difference between this and the last is not very marked. The bracts are shorter, and more resemble the lower petals of the flower, the leaves are smaller, and the plumes of blossom perhaps not so handsome.

#### Callicarpa.

Not very ornamental plants; bear large bunches of small, uninteresting flowers, succeeded by numerous shot-like berries, in October.

1. *C. cana*.—Has large coarse woolly leaves, with berries of a milk-white colour. 2. *C. lanceolaria*.—Rather large coarse leaves, and bears pale lilac flowers. And 3. *C. purpurea*.—A neat shrub with small leaves; bears numerous pretty lavender berries.

#### Congea.

*C. azurea*.—Native of Martaban; an exceedingly extensive climbing shrub, sometimes covering entirely the summit of a

large tree, and when in blossom in January, and seen from a distance, has a very splendid effect, presenting a large uninterrupted expanse of pale dull-red blossoms, somewhat resembling in form those of *Petraea*.

## GESNERACEÆ.

### Gesnera.

A very numerous genus of choice, small herbaceous plants ; of exquisite beauty when blossoming in a thriving condition ; for the most part unsuited seemingly to the climate of the plains, as not more than the two following, I believe, are to be met with in the Calcutta gardens.

1. *G. Douglassii*.—A very handsome species, with erect stems about ten inches high, upon the summit of which alone the foliage is borne : leaves lanceolate, four inches long, woolly, of a soft, agreeable yellowish-green ; bears, between January and April, rather large tubular flowers of a vivid orange-red. It requires at all times the shelter of a verandah or conservatory. The soil in which it is grown should by no means be dense, or at all impervious to water. In the pot in which it is to be planted lay some large pieces of brick, and over them a layer of cocoa-nut fibre, and then fill the upper half with a light soil of leaf-mould, river-sand, and shreds of cocoa-nut fibre, through which the water will drain down as soon as poured. Easily propagated by removal of the suckers it sends up.

2. *G. tubiflora*.—A native of Buenos Ayres, and a very common plant indeed about Calcutta. The stems lie prostrate upon the ground, bearing at their extremities whorls of woolly lanceolate leaves five inches long ; produces, in April, clusters of heavy but not disagreeably-scented, large, palish Primrose-coloured flowers, of tubular form, the tube three inches long, and then expanding so as somewhat to resemble a white Petunia. The root is tuberous, and might easily be mistaken for a large Potato ; should be grown in a pot, but will bear exposure to the weather. Easily propagated by separation of the tubers in the Cold season, but the plants, I believe, do not blossom for some time if the roots are much disturbed. Dr. Lindley con-

siders this more properly a *Gloxinia* than a *Gesnera*. (See 'Botanical Register for 1845,' p. 3.)

3. *G. Leichtlini*.—A very handsome plant; with large heart-shaped, dark-green leaves, rendered soft and woolly by the crimson pubescence with which they are covered, with their under-surface of a deep crimson; in character much like those of some of the *Begonias*: throws up footstalks two feet high, bearing a spike of pretty pale-vermilion flowers, opening in long succession. The bulbs, much like those of an *Achimenes*, were sent me from England, and thrived and blossomed well in my verandah at Gowhatti.

4. *G. splendens*.—The tuber of the size of a large Potato.

5. *G. magnifica*, *purpurea*.—These two last also I received from England: they thrived in my verandah, but did not blossom.

Besides the foregoing, about twelve named varieties are now cultivated, I am told, with success in the Betel-house.

#### *Achimenes.*

A genus of herbaceous tuberous-rooted plants, producing during the Rains a continued succession of large, most lovely flowers, in form something like those of the *Petunia*, but with a more flattened limb. The number of varieties is very great, nearly all of which may be easily procured from seedsmen in England. The plants are best kept under shelter from sun and rain, though I have seen them thriving very vigorously exposed to the full force of the latter, greatly of course to the detriment of their tender flowers. Their roots do not go deep into the earth, they therefore need only shallow pots or pans. If pots are used, half fill them with large pieces of brick, then put a layer of cocoa-nut fibre, and fill up with leaf-mould rendered grey with silver-sand and lightened with shreds of cocoa-nut fibre. If pans are used, lay at the bottom of them a layer of cocoa-nut fibre, and fill up with soil the same as used with pots. The pans should then be let down in empty flower-pots, the rims of the former resting upon the rims of the latter, as represented by fig. 8, page 69. By this means the plants will be raised up to view, and vermin will be prevented from creeping in through the hole at the bottom of the pans. When the

tubers begin to start, about March, put them in the soil an inch deep, not more than three at the most in each pan. After they have appeared above ground, water them constantly, or they will be liable to die down again. They remain in blossom more or less from June to October. In November cease to water them, and allow them to die down. They may then be left in their pots just as they are, and put away in some dry place till the time comes round again in March to repot them. Or the tubers may be taken up; but when this is done great caution must be used, and the soil be watered some hours beforehand to render it as loose as possible, as the tubers, from their scaly nature, are very brittle, and easily damaged. The several kinds may then be put away separately in jars or pots of sand till the season to repot them.

An interesting method of growing Achimenes is to put a tuber in a handful of leaf-mould, and bind moss round it with string, so as to form a ball of the size of a Pumelo. Lay it upon a flat earthen pan, with holes for drainage. Suspend the pan in the verandah, and keep the moss constantly damp. The Achimenes will thrust itself through the moss, and thrive and blossom, and form a very pretty ornament. I have grown *A. longiflora* and *A. alba* in this way.

Mr. Grote had in his garden at Alipore a small circular bed, under the shade of a tree, in the open ground, planted with Achimenes, which, he told me, thrived and flowered well there. The bed had a good foundation of kunkur for drainage. And Mr. S. Jennings at Allahabad says: "I know of nothing that equals Achimenes for the open border during the Rains."

None of the varieties appear to bear having their shoots shortened; and if much damaged in this way by the wind or any other cause, they do not recover themselves so as to thrive so well afterwards. The tops of the shoots, planted in sand, and well-watered, soon form vigorous young plants. I have tried to strike other portions of the shoots; but not found any successful, except cuttings with a single joint. This kind of cutting, with about an inch of stem left below the joint, so as to serve as a peg to secure it in its place, is let into the soil, so that the joint with its contiguous pair of eyes and leaves is half buried. This will soon form a rooted plant. A sprig also put into a phial of water soon forms roots. Except, however, in case of

accidental breakage of a rare specimen. propagation by cuttings is not worth while resorting to, as the plant is so prolific in producing tubers.

The following I have had blossoming satisfactorily in my verandah ; they comprise none of the so-named *Tydaea* kinds, several of which I have tried, but without success as might have been expected, since they do not make scaly tubers, but only slender underground stems, nor suffer drying like *Achimenes*.

1. *A. longiflora major*.—Flowers large, of a clear, pale azure-blue ; this is certainly about the most beautiful of all, as it is the commonest and most hardy. The plant is distinct from others in its tendency to throw up numerous suckers at a distance from the main stem.

2. *A. longiflora alba*.—A variety of the former and equally beautiful, with pure-white flowers.

3. MAUVE QUEEN, flowers very large, of a deep, pure azure-blue, with orange eye; somewhat similar to *longiflora major* ; but the plant is of a different habit, rather delicate, and not very free in blooming ; 4. AMBROISE VERSCHAFFELT, flowers French-white, beautifully pencilled with violet : a delightful plant and a profuse bloomer ; 5. DR. BUENZOD ; 6. CARL WOLFORTH ; and 7. PARSONI, are ordinary kinds of different shades of purple ; 8. VIOLACEA SEMIPLENA, a profuse bloomer, very handsome, with curious half-double purple flowers ; 9. GRANDIFLORA, a very distinct plant, with large handsome leaves ; flowers of a delicate rose-tint, with white eye ; the bulbs are as thick as a man's little finger, and as much as four inches long ; 10. ROSEA ELEGANS, a slender plant, with very small leaves ; flowers small, bright pink ; 11. METEOR, and 12. CARMINATA SPLENDENS, of different shades of crimson ; 13. VIVICANS, and 14. ECLIPSE, are all but the same ; flowers not large, of dazzling scarlet ; 15. SCARLET PERFECTION, flowers carmine-scarlet.

Amongst those mentioned as the most beautiful are, Aurora, described as very fine, with flowers two inches in diameter, deep heavy scarlet, with light yellow eye, besides :—

• *Adonis*; *amabilis*; *elegans*; *Escheriana*; *Estella*; *gigantea*; *ignea*; *magnifica*; *Mazeppa*; *Roezlia*.

#### Gloxinia.

This, like the last, is a very numerous genus of tuberous-

rooted herbaceous plants, some remarkable for the velvet-like lustre on their large oval leaves. They produce roundish bell-formed flowers of astonishing splendour during the Rains. They are easily obtained from England, and sometimes blossom beautifully, but do not seem to last long in this country, owing perhaps to sufficient care not being bestowed upon them. The mode of cultivation suited to them is the same nearly as that given for Achimenes. Sir J. Paxton observes that "the richest colours are usually produced in somewhat mellowed light, and that blossoms shaded by the leaves will be found of a richer tint than more exposed blossoms." They require some situation under shelter from the sun and from the rain. They thrive vigorously and blossom well, Mr. J. Scott tells me, in the grass conservatories in the Botanical Garden. Mr. Coles Hardinge states that at Rangoon he hybridized the flowers of plants he had in bloom there, and was very successful in raising fresh plants with the seed he saved from them. He sowed the seed in well-drained pans, filled with a mixture of sand and sifted leaf-mould, and covered with a piece of glass. They germinated in a week, and the seedlings were fit for pricking out singly into small pots in about a month: then they were covered with bell-glasses, till they had become strong and formed tubers. Mr. Coles Hardinge owed much of his success, I believe, to his seed having been fresh, as that which I have procured from England I have found to fail in germinating. Dr. J. Beaumont, of Indore, writes to the Agri-Horticultural Society:—

"I find Gloxinias do better if made to flower twice a year. I plant the bulbs in January; they flower in April; are dried in May; repotted and watered as soon as they begin to sprout in July, and they flower again in August and September. Treated thus, the bulbs are finer, larger, and grow much stronger than if flowered only once; and there is the advantage of two crops of flowers."

*G. maculata*.—A very common plant in Calcutta, altogether distinct from any of the florists' kinds spoken of above; of large strong-growing habit, handsome for its bright, glossy, succulent, heart-shaped leaves; bears in November, when it can be brought to blossom, which it is very shy of doing, large pale-blue, tumid, bell-formed flowers. It should be potted in a light rich soil, and be supplied with abundance of water during the

time of its growth. Shortly after the time of flowering the stems die down, when the large scaly tubers should be put away undisturbed in their pots till about May, at which time they begin to start again, and should be repotted.

### *Æschynanthus.*

Plants of this genus are natives of humid forests, and several are found in Assam. As regards their leaves and manner of growth, they much resemble the Hoya, but produce flowers very dissimilar. In their native localities they are epiphytal, and in Europe are said to succeed best in reduced moss, with a little heath-soil and potsherds, as also to flourish most luxuriantly on a log of wood covered with moss, fastened with copper wire. The above mode of culture points out the necessity of a light open soil of vegetable mould for their cultivation in this country. In the vicinity of Calcutta they thrive, generally speaking, but very indifferently, though plants of so much beauty as to deserve every attention bestowed upon them to make them thrive. Their cultivation in the Betel-house is attended with some success, I understand; though they flower but poorly there.

1. *Æs. grandiflorus*.—A native of India; bears, in September, heads of large trumpet-like flowers, of a beautiful crimson-scarlet colour with dark stripes.

2. *Æs. sp.* in Calcutta Botanical Gardens.—Altogether smaller in habit, is also very beautiful in blossom, producing flowers of the same colour and at the same season as the last. 3. *Æs. Roxburghii*. Flowers described as scarlet. 4. *Æs. zebrina*.

## CRESCENTIACEÆ.

### *Crescentia.*

1. *C. Cujete*—CALABASH-TREE.—A tree shrub: flowers large, bell-shaped, greenish-white, with dull-purple lines. Principally interesting for the pumpkin-like gourd it bears, of which Mr. Gosse says, in Jamaica admirable domestic vessels are made.

2. *C. acuminata*.—A curious evergreen shrub, interesting from the character of its stems, which bear wings, rendering them of the same broad flat appearance as the leaves.

**Kigelia.**

**K. pinnata.**—A large, coarse-looking tree, unfit for the garden, remarkable for the curious way in which the bunches of dull liver-coloured flowers dangle from different parts of it at the end of their rope-like flowering stems, six feet in length. These are succeeded by enormous cucumber-like pods, sometimes in bunches of two or three together.

**BIGNONIACEÆ.****Bignonia.**

The species of *Bignonia*, natives of this country, are nearly all trees of large size, producing great dull red and yellow, unpleasantly-smelling flowers. Those most deserving a place in the garden have been introduced into India, and are plants of scandent habit; these, when in full bloom, are truly charming objects. They are benefited by being well pruned in after they have done flowering. All are exceedingly easy of propagation. Cuttings strike freely.

1. *B. Chamberlaynei*; *syn. equinoctialis*.—A most extensively-spreading shrub: covers a large space of trellis or wall in a very short time, and requires to be often pruned in to keep it within bounds; throws out slender green stems to a great length, along which it bears pairs of pinnate leaves. Each leaf consists of two oval, pointed, wavy, smooth, shining leaflets, two inches long. From the axes of the leaves are borne primrose-coloured thimbled-formed flowers, with the tube two inches long, produced in great profusion nearly at all times, contrasting beautifully with the richly verdant and graceful foliage.

2. *B. crucigeria*.—A climbing shrub of the habit of the preceding, and bearing in the Hot season flowers similar in form and size, of a dull tawny-yellow colour; not a common plant, nor a very attractive one.

3. *B. gracilis*.—An extensively-climbing shrub, with rich, varnished-green, pinnate leaves, of two leaflets, broadly oval, pointed, two inches long; bears, during the Hot months, a vast profusion of flowers, in form and colour similar to those of an

Allamanda, with a tube two inches long, expanding at the mouth into five lobes, three inches across. During the time that it is in blossom a plant of extraordinary beauty.

4. *B. incarnata*.—A climbing woody shrub, with smooth, rather leathery, lanceolate leaves, three to four inches long, bears flowers similar to the last in size and form, of pale lilac colour, striped with deep purple; produced in great profusion in the Hot months, and presenting a remarkably handsome effect upon the Bay-leaf-like foliage.

5. *B. venusta*; *syn. Chirere*.—A climbing shrub, spreading over a vast space where room is afforded it. The foliage consists of pairs of pinnate leaves along the stem, of two heart-shaped, pointed, dull-green leaflets, three inches long. From the axil of each leaf is borne a crowded drooping corymb of tubular vermilion-coloured flowers, two inches long; blooming in January and February in such exuberant profusion as to cover the entire surface of the plant with a carpet of colour. . Probably no plant in the world presents a more truly gorgeous appearance than it does then.

6. *B. undulata*.—Is described as a tree with drooping branchlets like those of the Weeping-willow, and bearing in March small racemes of very large, erect, inodorous, orange-coloured flowers. "When in flower," Dr. Roxburgh says, "one of the most beautiful small trees I have seen."

7. *B. quadrilocularis*.—A large tree, blossoms at the beginning of the Hot season with large erect panicles of many-flowered, large, rose-coloured, delightfully fragrant flowers.

8. *B. amœna*.—A small handsome tree, with cheerful foliage of narrowly-lanceolate dark-green leaves, two inches long; produces in the Hot season numerous funnel-shaped large yellow flowers, with mouth expanding into five orange-coloured lobes.

9. *B. picta* and 10. *B. Rözleana* are of late introduction.

#### Frederika (*Fredericia*?)

F. *Guillaumi*.—A new creeper recently introduced.

#### Millingtonia.

M. *hortensis*.—A lofty tree, with exceedingly beautiful foliage

of deep-green decomound leaves, looking remarkably handsome in the Cold season, when in blossom with its numberless panicles of large, pure-white, fragrant flowers. Not an uncommon tree, and one, as Dr. Roxburgh well remarks, adapted for avenues and plantations.

#### **Amphilophium.**

**A. Mutisii.**—A climbing shrub of most extensive growth, making its way to the summit of the loftiest trees. Far from being an ornamental plant, except for the flowers it occasionally produces in October, which are large, of a fine purple colour, and, from the manner in which they are borne, somewhat resemble great clusters of Grapes.

#### **Spathodea.**

**1. S. uncinata.**—An extensively-spreading climbing shrub, with very slender stems and dense foliage of opposite binate leaves; leaflets narrowly heart-shaped, an inch long; bears in the Hot season numerous pale livid-red flowers, neither large nor very interesting.

**2. S. serrulata.**—A high tree; bears in May, in great profusion, drooping creamy-white flowers of extinguisher form, seven inches long.

#### **Tecoma.**

**1. T. grandiflora.**—A handsome climbing shrub, with graceful spray-like foliage of bipinnate leaves; leaflets seven, roundish, saw-edged, about three-quarters of an inch long. Trained up a high pole, surmounted by two short cross-beams, in the manner of a turnstile, it will let fall its great drooping clusters of large orange-coloured flowers in a very beautiful way during the Hot months. It sheds its leaves in the Cold season, when it should be well cut in, and the numerous suckers it sends up all around be removed, and some enriched soil be given to the roots. The suckers will afford a supply of fresh young plants. It bears seed abundantly in November.

**2. T. radicans.**—A small shrub three or four feet high of most graceful foliage, similar to that of the last, but of smaller character and more dense and verdant; of sprawling habit, emitting roots from its branches wherever they touch the ground;

constantly in blossom with a profusion of drooping corymbs of orange-scarlet tubular flowers, an inch and a quarter long.

3. *T. jasminoides*.—A scandent shrub, with bright, dark green pinnate foliage; leaflets five to seven, smooth, shining, narrowly-oval, pointed; certainly one of the most beautiful plants of the garden; continually in blossom with corymbs of large, rosy-white, much-expanded flowers, with dark-purple centre. Propagated readily by cuttings.

4. *T. stans*.—A small tree, six to eight feet high, of remarkably graceful foliage of pinnate leaves: leaflets from seven to eleven, three or four inches long, much slashed and notched; when in full blossom, as in the vicinity of Calcutta it nearly always is, a most beautiful plant. Flowers very large, funnel-shaped, with wide-expanded mouth, golden-yellow. It is killed by the Cold season in the Upper Provinces, but seeds sown there in March produce plants which blossom beautifully in October.

5. *T. apiifolia*.—A variety of the last with parsley-like foliage is met with in the Calcutta Botanical Gardens.

6. *T. velutina*.—A handsome plant of the same size as the last, and with very similar flowers; leaflets lanceolate, five inches long, saw-edged, and not deeply cut.

#### *Eccremocarpus.*

*E. scaber*.—A beautiful, slender, climbing shrub; bears middling-sized, tubular, pale-red flowers; grows freely at Ootacamund, but I have never seen it in the plains. I have many times sown the seed, but it has never germinated.

#### ACANTHACEÆ.

In plants of this order our Indian gardens are rather rich. They are for the most part easy of culture, and are propagated readily from cuttings during the Rains. All require very much the same mode of treatment; that is to say frequent renewal, transplantation to fresh soil every year or so, and close cutting in when the flowering season is over, otherwise they soon come to look unsightly.

In Vol. I., New Series, of the 'Journal of the Agri-Horticultural Society' is a descriptive and classified list of all the plants of this order cultivated in the Botanical Gardens, by Dr. T. Anderson, at the conclusion of which are the valuable remarks I take leave to subjoin :—

" Until recently all the Acanthaceæ have been cultivated in the open ground, generally in the flower borders of the garden, where the soil is kept open. Under this treatment many of the species grow vigorously, and afford in their season of bloom some of the gayest ornaments of the Indian flower-garden; but there are many other lovely species, and especially those which inhabit the cool mountain forests of the Himalaya, the Khassia hills, Ceylon, and Java, with some delicate American species, which have been kept alive with difficulty. The dry atmosphere and scorching sun prevailing during March, April, and May are most pernicious to these plants, and, excepting perhaps moisture stagnant about their roots, are the worst conditions in which they could be placed. Shade-loving species of Acanthaceæ have, however, lately been removed to a cool house, like those adopted here for the cultivation of Orchids and Ferns. In such structures these delicate Acanthaceæ have grown with a surprising vigour, and have become a mass of beautiful luxuriant foliage, and many of them have already blossomed as freely as in their native forests.

" Some of the Ruellia and the allied genera Stephanophyllum and Stemona-canthus, nearly all the Strobilanthes, some of the Dædalacanthi, all the Aphelandreae, Cyrtanthera, Beloperone, the American Justiciæ, several of the Eranthemæ, and five species of Thrysanthus thrive under shelter; while exposed in open borders some of them barely exist, and scarcely ever flower."

### Thunbergia.

1. *T. fragrans*.—An herbaceous climbing plant, with slender stems and rough, small, heart-shaped leaves; bears nearly always beautiful snow-white flowers of the size of a rupee; very ornamental grown in a pot. Propagated from seed, which it bears in abundance. Contrary to what the name would seem to denote, the flowers have no fragrance whatever.

2. *T. grandiflora*.—A most extensive climbing shrub, with heart-shaped leaves; grows to the summit of the loftiest trees, covering them with a curtain of foliage so dense as, when seen from a distance, to present the appearance of some ivy-clad ruin. It

may, however, by training and close pruning, be made to blossom beautifully of a small size; bears very large, pale-blue, widely-expanded flowers at all seasons, but principally in the Cold weather.

3. *T. laurifolia*.—A large climbing shrub, native of Burmah; bears flowers hardly to be recognised from those of the preceding, but quite different foliage, the leaves being of a long, lanceolate, tapering form, nine inches long; when trained over a wall or trellis the profusion of large flowers, two-and-a-half inches across, of the palest lavender colour, which it bears, makes it a truly delightful object during the Cold season. Yields seed abundantly.

#### Meyenia.

1. *M. Hawtayneana*.—A neat, pretty, climbing plant, with slender thread-like stems, and very rigid heart-shaped leaves, an inch and a half long; bears, at nearly all seasons, large azure-blue flowers, with a white tube; a native of the Nilgherries, and rather delicate in the plains, where it is very apt to die off; succeeds better in the open ground than in a pot, and should be planted in a shady spot; seeds abundantly in the Cold weather.

There is likewise a white variety.

2. *M. erecta*.—A dwarf woody shrub two or three feet high, with smooth, myrtle-like, oval leaves, the stems and young shoots of a deep purple colour; bears, principally in the Cold season, large, beautiful, gloxinia-like, azure-blue flowers, with pale-yellow tube. This charming plant, introduced from Kew in 1859, thrives here so well, and is so easily propagated, that it has now become one of the commonest ornaments of the Calcutta gardens. There is a variety with white flowers, but the blue is much the handsomer. Propagated by cuttings in the Rains; produces abundance of seed in the Cold season.

#### Hexacentris.

1. *H. coccinea*.—An extensively-climbing shrub; ornamental if kept within bound; has curious parallel-nerved, narrow, heart-shaped leaves, about four inches long; bears moderate-sized flowers of singular form and of yellow and dull orange-red colour in the Cold season.

### Henfreya.

*H. scandens*.—A shrub of moderate size, native of Sierra Leone, with smooth lanceolate leaves five inches long; bears in March large, white, handsome, thimble-formed flowers.

### Dipteracanthus.

*D. ciliatus*.—An exceedingly charming small prostrate-growing shrub, with oval, pointed, hoary leaves, two inches long; blossoms in September with beautiful large, thimble-formed, pure azure-blue flowers with a white tube.

### Petalidium.

*P. barlerioides*.—A very pretty small shrub, with round smooth leaves; bears in February and March a profusion of bunches of large, white, thimble-formed flowers.

### Stephanophysum.

1. *S. repens*.—A small herbaceous plant; bears, nearly always, heads of vivid-scarlet flowers, an inch and a half long, of a horn-like form, with gaping mouth: sparkling and pretty.

2. *S. Baikiei*.—A remarkably beautiful plant, about two feet high, with wavy, oblong, pointed leaves; bears in the Cold season heads of numerous large, tubular, heath-like, deep-crimson red flowers, about two inches long. A profuse bloomer.

### Strobilanthes.

1. *S. scabra*.—An exceedingly pretty small shrub when, in March, it bears in great profusion its clusters of small thimble-formed, sulphur-coloured flowers.

2. *S. auriculata*.—A small plant of rather coarse appearance, but very handsome while bearing its numerous heads of pale lilac, thimble-formed flowers in the Cold season.

3. *S. Sabiniana*.—A small shrub two feet high, remarkable for its large deep-green, pointed oval, saw-edged leaves, from two to four inches long, with their under-surface of a purplish-red colour; bears large lilac flowers in the Cold season.

4. *S. maculata*, *olim Ruellia*.—A small herbaceous plant; when in vigour very ornamental for the double row of blotches of silvery film upon each of its large, smooth, glossy, deep-green lanceolate leaves, three or four inches long. Dr. Anderson remarks: "The silvery-white spots on the leaves, so beautifully marked in its native forests, are seldom well developed in Calcutta."

5. *S. tomentosa*.—A small not very ornamental plant, with densely woolly stem and leaves.

6. *S. sessilis*.—Native of Bombay; described in *Curtis* as bearing large handsome blue-rimmed flowers with lilac tube.

#### *Goldfussia.*

1. *G. colorata*.—A handsome small shrub three feet high, with oval, taper-pointed, saw-edged, deep green leaves, which, while it is in blossom, from December to March, contrast well with its sprays of gay crimson bell-like flowers.

2. *G. isophylla*.—A very cheerful and delightful little bushy plant about two feet high, with dark willow-like leaves; blossoms in the shade in the Cold season, with an unlimited profusion of pale-blue flowers, like those of the Harebell *Campanula*.

3. *G. anisophylla*.—Differs imperceptibly from the preceding, except in having its pairs of leaves of unequal size, and its flowers a little larger.

4. *G. glomerata*.—A dwarf rather prostrate shrub, with hoary green leaves, which contrast finely with the beautiful large, deep azure-blue flowers, with swollen white tubes, that it bears in the Cold season.

5. *G. lamiifolia*.—A very pretty small slender trailing plant; bears in the Cold season numerous little pale-lilac thimble-formed flowers.

6. *G. divaricata*.—Dr. Anderson describes as a large shrubby species from the temperate forests of Nepal; bearing large snowy-white flowers with a dark brown spot on the inside of the tube of the corolla: plants die after ripening their seed.

7. *G. rubescens*.—Dr. Anderson says: "A native of the sub-temperate forests of Sikkim: a beautiful species producing a profusion of large blue flowers once only in its lifetime."

### Dædalacanthus.

**D. splendens.**—Dr. Anderson says: “A very handsome species.” The segments of the corolla change to a dark cinnabar colour on the opening of the flower.

### Asystasia.

**1. A. formosa.**—A truly lovely small herbaceous plant, produces large handsome, bright-scarlet, tubular blossoms in constant succession all the year round nearly; rather delicate; should be grown in a pot and kept somewhat in the shade.

**2. A. Coromandeliana.**—A trailing plant of weedy and untidy habit; grows in the shade, and overruns the ground in a very short time; bears numerous pretty thimble-formed pale-purple flowers, with light straw-coloured tube.

**3. A. Africana.**—Flowers almost pure white, produced nearly throughout the year.

### Barleria.

**1. B. buxifolia.**—A dwarf, woody, prickly, weedy kind of plant; bears in the Cold season small white, bell-formed flowers, of little interest.

**2. B. ciliata.**—A very ornamental bushy shrub about three feet high; blossoms in the Cold season with numerous rather large, bright, pale-blue flowers.

**3. B. cristata.**—A handsome bushy shrub three feet high; bears in September and October a profusion of fine azure-blue flowers.

**4. B. dichotoma.**—Exactly like the preceding, except that it bears white flowers in September.

**5. B. Gibsoni.**—A bushy shrub, about three feet high, with smooth, pointed, lanceolate leaves, four inches long; by far the most showy of all the Barlerias, and a splendid ornament in the Cold season, when it puts forth its constant succession of bright azure-blue flowers, three or four times larger than those of any other species.

**6. B. lupulina.**—A small thorny plant, with the long, narrow, glossy leaves prettily marked with their red midrib; bears small

straw-coloured flowers on great, chocolate-brown wheat-ear-like heads ; curious, but not very ornamental.

7. B. *rosea*.—A small shrub, very beautiful in the Cold season when bearing its profusion of rose-coloured blossoms.

8. B. sp.—From Mauritius; somewhat similar to the preceding, but of larger growth; a splendid object in November and December, when it becomes one complete mass of rose-coloured blossom.

9. B. *Prionitis*.—A small thorny shrub about two feet high, a common weed of this country; bears pale nankeen flowers, which have a pretty appearance upon the deep-green verdant leaves, when the plant is in good condition.

10. B. *cærulea*.—A small not very pleasing plant; bears azure-blue and rather pretty flowers, but on great ugly heads of compressed bracts.

11. B. *hirsuta*.—An agreeable shrub when in blossom with its bright azure-blue flowers.

12. B. *montana*.—A pretty plant, with deep-green leaves shot with purple : flowers pale rose-colour.

#### Geissomeria.

G. *aurantiaca*.—A very handsome shrub, three feet high, with large, thick, glossy laurel-like leaves; bears in February and March blossom-heads of bright vermillion tubular flowers an inch long; requires to be kept in a shady situation, or the leaves lose their fine verdant appearance.

#### Gymnostachyum.

G. *Zeylanicum*.—A lovely little plant, Dr. Anderson says, with variegated leaves, native of the shady forests of Ceylon. Under the synonym *Fittonia* are given some two or three other species of low trailing habit ornamental for the pink or white veins of their leaves.

#### Acanthus.

A. *ilicifolius*—*Hurkut*.—A shrub about three feet high, curious for the perfect resemblance its prickly leaves bear to those of the Holly; produces in April and May large sky-blue

flowers, somewhat like those of the blue Iris; may be seen growing wild in wet ditches about Howrah.

### Crossandra.

*C. infundibuliformis*.—A small shrub two or three feet high, with lanceolate, taper-pointed leaves, three or four inches long; bears largish orange-yellow flowers, upon wheat-ear-like heads, in uninterrupted succession from March to November.

There is a variety with orange-scarlet coloured flowers.

### Aphelandra.

1. *A. cristata*.—A noble-looking shrub, three feet high, with lanceolate taper-pointed leaves, seven or eight inches long; bears in March, on the summits of the stems, crowds of quadrangular spikes of brilliant-scarlet flowers.

2. *A. fulgens*.—In general character not very dissimilar to the last, but has smaller leaves; blossoms in the Cold season, and produces much larger flowers.

3. *A. tetragona*.—A plant of extraordinary beauty when in full blossom; bears densely-set vermillion-coloured flowers along the edges of the long cube-formed ears. Of dwarf habit, with rich foliage of lanceolate, taper-pointed, wavy leaves.

### Phlogacanthus.

*P. thyrsiflorus*.—A large shrub, from six to ten feet high, with handsome, laurel-like, very verdant leaves; bears in January and February, in great profusion, long crowded spikes of large tawny-brown flowers; much commended for its beauty by Roxburgh.

### Graptophyllum.

1. *G. hortense*.—A shrub of moderate size, with large, oval, pointed leaves six inches long, of a dull deep-green above and of a dark-red on the under-surface; useful placed as a screen to keep out of view anything unsightly, as well as a fine foil to flowering plants in front of it. *Var. G. pictum*.—CARICATURE PLANT.—A large shrub with remarkably beautiful foliage, the leaves being large, heart-shaped, of a fine pure green mottled

with blotches of creamy-white; interesting also for the pretty pink flowers it bears.

#### Cyrtanthera.

1. *C. Pohliana*.—A small plant with pointed oval leaves three inches long, bears in the Cold season crowded heads of rose-coloured, long, tubular flowers, ending in long gaping lobes with long-projecting stamens; rather pretty.

2. *C. aurantiaca*.—Flowers Aphelandra-like, large, handsome.

#### Adhatoda.

*A. cydoniæfolia*.—A most beautiful shrub in Mr. Grote's collection, native of Brazil; bears in the axils of the leaves large flowers, with the upper lip white, spotted with purple at the top; the lower deep-purple with a yellow ray down the middle.

#### Beloperone.

1. *B. oblongata*.—A handsome small plant, nearly always in blossom with large purplish-crimson flowers.

2. *B. nervosa*.—Of larger habit than the last, with larger leaves; flowers pink.

3. *B. verrucosa*.—A small plant, with pink flowers not unlike those of a Dead-nettle.

#### Eranthemum.

1. *E. bicolor*.—A small plant, very beautiful when in full blossom, as it nearly always is, except in the Cold season, with its rather small, pure-white, sparkling flowers, with a dark-duce spot on the under lip.

2. *E. crenulatum*.—A small shrub, bears in the Cold season pure-white flowers, prettily pencilled with puce-coloured markings.

3. *E. erectum*.—A plant about three feet high, with small narrow leaves; bears, in the Cold season, flowers of a most beautiful blue with dark eye.

4. *E. nervosum*; *syn. Dædalanthus*.—A large bush, with large blackish-green leaves; of extraordinary beauty when in full

bloom in February, with its profusion of deep azure-blue flowers on large prettily-pencilled ears. *Var. E. pulchellum*.—Bears flowers in March, similar, but of a paler blue.

5. *E. strictum*.—Bears flowers much like those of *E. erectum*, but with a light eye, and has much larger leaves.

6. *E. grandifolium*.—A plant of straggling habit with pale-blue flowers.

7. *E. racemosum*.—A small under-shrub of great beauty, native of Moluccas, with oblong leaves; bears in November large pretty flowers, pale pink, or white tinged with red.

8. *E. Blumei*.

9. *E. cinnabarinum*.—From the Tenasserim forests: bears large, conspicuous flowers.

10. *E. igneum*.—Lately introduced.

#### Justicia.

1. *J. Betonica*.—A small herbaceous plant, remarkable principally for the beautiful pencilling of the ears on which the flowers are borne.

2. *J. calycotricha*, *syn. Thrysacanthus*.—A small, delicate plant, very pretty when in bloom, in the Cold season, with its close heads of pale-lemon flowers.

3. *J. carnea*.—A very choice and handsome plant, two or three feet high; bears, in the Cold season, large, gaping, rose-coloured flowers in great clustered heads.

4. *J. coccinea*, *syn. Thrysacanthus*.—A shrub, three or four feet high, with large, handsome oval leaves, as much as ten inches long, of a dark bright-green, relieving beautifully the brilliant, crimson-scarlet, tubular flowers, two inches long, borne on densely-crowded spikes. In a good soil apt to be troublesome from the numerous suckers it throws up around.

5. *J. Gendarussa*.—Bears flowers of moderate size, dirty-white, and of little beauty.

6. *J. grandifolia*.—A handsome-foliaged plant with delicate flowers; from the Tenasserim forests.

7. *J. rutilans*, *syn. Thrysacanthus*.—Flowers scarlet.

#### Peristrophe.

1. *P. tinctoria*.—A pretty, simple little plant, two feet high;

bears in the Cold season unpretending flowers, consisting merely of two pale-pink, narrow, strap-like lobes.

2. *P. speciosa*.—Very similar to the foregoing, except that the flowers are of somewhat larger size. Roxburgh says of it: "A native of Bengal, where it blossoms in the Cold season, and is one of the greatest ornaments of the forests."

3. *P. angustifolia aureo-variegata*.

#### *Sanchezia.*

*S. nobilis*.—Native of Ecuador: of late introduction: described as resembling an *Aphelandra*; an abundant bloomer, with large dense terminal panicles of bright yellow tubular flowers set in broad crimson bracts; a magnificent object when in bloom.

#### *Fittonia.*

Trailing plants with brilliantly-marked leaves, love the shade, and are suited only for cultivation in the Betel-house. *F. agyronera* is described as having vivid shining green leaves covered with silver network.

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### SCROPHULARIACEÆ.

#### *Brunsfelsia.*

1. *B. Americana*.—An erect growing shrub, six feet in height, with lanceolate, dull yellowish-green leaves; not ornamental, except in October and March, when in full blossom; flowers produced in great profusion, very large, in form somewhat like those of a Petunia, pure-white at first, becoming on the next day of a beautiful primrose-colour; yields seed in the Cold season, somewhat resembling Holly-berries, from which it may be propagated as well as from layers.

2. *B. undulata*.—A shrub of about the same size as the last, but of a more spreading habit, and with wavy leaves; produces very similar flowers, and bears, in March, round seed-pods, like those of the Wood-apple, of the size of a small Lime.

3. *B. montana*.—A small shrub, with long narrow, lanceolate leaves.

4. *B. Cubensis*.—A shrub with neat foliage of shining lanceolate leaves; plants of this and the last are in the Calcutta Botanical Gardens; but I have not seen them in flower.

5. *B. erecta*.

*Franciscea.*

A genus of exceedingly ornamental flowering under-shrubs, natives of Peru and Brazils, where they are found growing in the shady parts of forests. A light pervious soil, containing a liberal supply of leaf-mould and some sand, suits them best. Propagated by layers.

1. *F. latifolia*.—A small not uncommon shrub; one of the most lovely plants our gardens contain; has soft oval leaves of a most verdant refreshing green, which it sheds in the cold weather, but by the end of February puts forth again, producing at the same time numerous exquisitely-fragrant flowers of flattened form, of about the size of a rupee, at first of a fine deep-blue, subsequently changing to pure-white; blossoms also in July. It is usual to cultivate it in large pots, though it may be grown in the border.

2. *F. eximia*.—It is stated that “in Belgium this is spoken of as the finest species of the genus yet in cultivation.” It is met with in Calcutta, but not common; a somewhat erect-growing shrub three or four feet in height, with lanceolate leaves, tapering to a sharp point, from three to six inches long, of a dull opaque-green colour; and with downy branches. Blossoms in February profusely, with flowers very similar to those of the last.

3. *F. uniflora* (*F. Hopeana*?).—Very similar to the two foregoing; but with smaller leaves; flowers somewhat smaller, borne one on a footstalk, in February and March, presenting a perfect mass of lovely blossom, pure-white or deep-blue, according to the time they have opened, mingling together with delightful effect, and emitting a most agreeable perfume. Its main detraction is that it is rather bare of foliage at the time.

4. *F. confertiflora*.—A handsome shrub, with oval leaves, three or four inches long; bears crowded cymes of beautiful lilac flowers; a rare plant here, not succeeding well, I believe, in the climate.

5. *F. hydrangeiformis*.—Remarkable for the largeness of its

leaves, and its close heads of purple flowers; has, I understand, not been cultivated in this country with success.

#### Calceolaria.

The attempt to introduce into this country any of the beautiful plants of this genus I believe to be perfectly hopeless. Good thriving seedlings may be easily raised during the Cold season, but will be sure to perish upon the first approach of the Hot weather. I noticed plants in the Gardens at Ootacamund, but they seemed to thrive very indifferently even there.

#### Angelonia.

*A. grandiflora*.—A small herbaceous, not very pleasing plant, about two feet high; bears, nearly all the year, long spikes of numerous small, blue, gaping flowers, with a strong, disagreeable scent, which some, however, have considered to resemble that of the Pine-apple; plants require to be often renewed, or soon grow to look old and unsightly.

#### Antirrhinum.

*A. majus* — SNAPDRAGON.—The seed of this handsome and familiar herbaceous plant is usually sown in October. The variety and beauty of the flower will of course depend upon the seed. The plants will blossom in March, but they do so more handsomely, I think, from being preserved until the following Cold season, before flowering.

#### Maurandya.

*M. Barclayana*.—A lovely creeping plant of slender habit and graceful foliage; requires to be trained on a light trellis, and is best adapted for growing in pots to decorate the verandah; flowers snapdragon-like, of several varieties of colour, dark-purple, rose, and nearly white; constantly in blossom. Seeds, sown as usual with the annuals in October, produce plants that blossom in three or four months' time. There are two or three other species of Maurandya, but none at all equal in merit to this.

### Lophospermum.

*L. scandens*.—A very handsome herbaceous creeper; requires a large extent of trellis for its support; flowers large, very similar to those of the Foxglove, but more delicate, of a beautiful rose-colour; plants raised from seed in October, and kept through the Hot weather till the next Cold season, blossom in great beauty in February; they require a great deal of pot-room, and a rich and well-watered soil.

### Pentstemon.

Herbaceous plants, about two feet high, producing erect spikes of pretty flowers of various colours, tubular or bell-formed, like those of Angelonia but larger, some, it is said, as large as those of the Lophospermum; plants raised from seed sown with the annuals in October will continue in blossom during the Hot and Rain seasons following. May be propagated by division of the roots, or by cuttings.

English seedsmen offer seeds of several species bearing scarlet, blue, yellow, and other coloured flowers; but the largest and finest flowers are produced from hybrids with fancy names, which if desired must be imported from some nurseryman: and many possibly might be thought well worth it.

### Tetranema.

*T. Mexicana*.—A small pot-plant, half a foot high; in habit of growth somewhat resembling the Primrose; nearly perpetually in blossom with crowded umbels of small, gaping, pale-lilac flowers; a perfect little gem, quite the ornament of the verandah, where it should be always kept, under shelter from sun and rain; requires to be renewed every year; produces abundance of seed, which should be sown as soon as gathered, is as fine as dust, and takes a month or two in germinating. A pane of glass should be kept over the pot in which the seed is sown, to prevent the earth from drying too soon. The plants require a light vegetable soil, and perfect drainage.

### Russelia.

*L. juncea*.—A very common, but an exceedingly beautiful,

bushy plant about three or four feet high; perpetually in full blossom with tubular bright-scarlet flowers, half an inch long, borne in great profusion on its long rush-like stems. In England it is not unfrequently grown suspended in baskets, over which the drooping flower-loaded branches have a very delightful appearance. Plants, however, thus treated in this country would require constant attention, that the soil be not allowed to dry up through want of watering. Every portion of it that touches the ground in the Rains takes root. I had in my garden several plants growing out of the crevices of a north wall, which had rooted themselves there from a plant that happened to be leaning against it in the Rain season. These had a very curious and interesting appearance.

2. *R. floribunda*.—A very handsome plant, bearing little similarity in general appearance to the preceding; flowers not large, crimson scarlet, borne in crowded bunches along and on the summit of the stem, in great profusion, at all seasons. Propagated by division.

#### Torenia.

1. *T. Asiatica*.—Called sometimes *Syspara* creeper, from being a native of that locality in the Nilgherries; an extremely beautiful herbaceous pot-plant; flowers small, bell-formed, pale-purple, with a large blotch of dark clear-purple on the lower lobe, sparkling like enamel; best renewed annually from seed sown in March; the plants thrive well in the shade, with their pots constantly immersed in pans of water, and blossom in great beauty in September.

2. *T. sp.*.—A plant resembling the foregoing, but far inferior to it, the flowers being devoid of the fine deep-purple blotch on the lower lobe.

#### Buddleia.

1. *B. Lindleyana*.—A very ornamental shrub, growing to the height of six feet; introduced from Chusan by Mr. Fortune; flowers small, but very numerous, pale-pink or rich-violet, borne densely upon racemes of blossom, four to six inches long, in unlimited profusion all the warmer months; requires to be well cut in, in November. Propagated easily by cuttings.

**2. B. Neemda.**—Sir J. Paxton says of this: “One of the most beautiful plants of India.” A shrub of small growth; flowers milk-white, borne densely on long narrow spikes in January. Propagated by cuttings.

**3. B. Madagascarensis.**—A large shrub of very rampant growth, fit only for the shrubbery or outskirts of the garden; produces its flowers in January, small, of a bright pale-orange colour, borne in long, loose, drooping clusters, beautiful to look upon, but emitting around a most offensive smell; should be cut in severely after flowering. Propagated by cuttings.

**4. B. paniculata.**—A shrub of little merit, with white flowers.

**5. B. globosa.**—This beautiful plant, so common in the English gardens, with its balls of orange-coloured blossoms, has not, I believe, found its way to India.

### Digitalis.

### FOXGLOVE.

The attempt to cultivate this well-known plant in India has never, I believe, proved successful.

### EPIGYNOUS EXOGENS.

### CAMPANULACEÆ\*

#### Campanula.

#### BELL-FLOWER.

The perennial Campanulas are very numerous, including among them the old familiar Canterbury Bell and Chimney Campanula. Young plants raised from seed sown in October and kept under shelter till the following Cold season, and then re-potted in fresh soil, may chance to come into blossom; but in the vicinity of Calcutta they rarely do so. Dr. Voigt mentions as many as thirteen herbaceous species blossoming in the Calcutta Gardens during the month of June. Not one of these, I believe, is to be met with there now.

**C. Lychnitis.**—An exceedingly pretty and not uncommon pot-plant; bears, at nearly all seasons, erect spikes, a foot and a

half high, of large bright-blue bell-like flowers. Easily multiplied by division of the roots.

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### LOBELIACEÆ.

#### *Lobelia.*

An extensive genus of herbaceous plants, some of great beauty ; we have but one garden species, I believe, that lasts with us as a perennial.

*C. radicans*.—A small trailing plant, nearly always in blossom, with a profusion of small pale-violet flowers, having a pleasant bitter-almond-like fragrance.

#### *Centropogon.*

*C. fastuosus*.—An herbaceous pot-plant, bearing beautiful bright-crimson tubular flowers, half an inch long. Two or three specimens were in the conservatory of the Agri-Horticultural Society a few years ago, but have since disappeared, unsuited possibly to the climate.

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### VALERIANACEÆ.

#### *Nardostachys.*

*N. Jatamansi*.—SPIKENARD of the ancients; a small, unattractive, herbaceous pot-plant, native of the Himalayas, and rare in Calcutta.; bears small dirty-white flowers in March, on a long erect spike, in much repute for their fragrance.

### DIPSACEÆ.

#### *Scabiosa.*

#### SCABIOUS.

Plants of these herbaceous perennials, raised from seed in October, may be preserved till the following October ; repotted

then they will put forth their handsome dark-purple knob-like heads of blossom during the Cold season.

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### ASTERACEÆ.

#### *Eupatorium.*

1. *Eu. asperum*.—A small herbaceous plant, tolerably pleasing when in blossom with its numerous groundsel-like dull-purple flowers.

2. *Eu. fœniculaceum*.—A plant somewhat similar to the preceding, but of smaller habit, and with pale-lavender smaller flowers.

3. *Eu. odoratum*.—A very pretty small shrub, each of its blossoming rods having in September and October a delicate feather-grass-like appearance, with exceedingly small, densely numerous, very fragrant flowers. Propagated by division of root, or by seed.

4. *Eu. sp.*.—A small herbaceous pot-plant, unnamed, lately introduced into the Calcutta Botanical Gardens; bears in March large handsome trusses of compactly-set, large, groundsel-like, lavender flowers; when in full blossom a very beautiful plant.

#### Aster.

1. *A. annuus*.—A small plant; produces, in May small unpretending, white daisy-like flowers; of little merit.

2. *A. sp.*.—Name un-ascertained; an exceedingly common plant in the Calcutta Gardens; strongly resembles that figured in Curtis as *A. Sikkimensis*; very pretty when in blossom, as it nearly always is during the Hot months, with flowers somewhat like those of the Michaelmas Daisy, but much larger and finer, borne in large heads about a foot from the ground. Easily multiplied by division of the roots.

#### *Bellis.*

*B. perennis*.—DAISY.—Plants of the Daisy, raised from seed sown in October, will come into blossom the same season. The few that prove double should be preserved, and the rest thrown .

away. Those preserved should be potted in well-drained pots, and put in some place under shelter from the Rains till the following October, when they should be turned out of their pots, separated at the roots into several small plants, and be then repotted, or put out in the border in good rich soil. They will blossom beautifully, thus treated, the second season. No plant deteriorates so much if not shifted frequently into fresh soil.

### Solidago.

*S. Canadensis*—GOLDEN ROD.—As common a plant in the Calcutta gardens and thrives equally well as in those of England; well known for its long feather-head-like rods of small, bright-yellow, densely-crowded flowers. Propagated by division.

### Dahlia.

*D. superflua*.—Though the Dahlia thrives well and blows freely in India, it very rarely produces those fine, handsome, fully-double flowers which make it so conspicuous an object of beauty in the gardens of Europe.

The following will perhaps be found the most advisable mode of cultivation. About July the tubers begin to start. They should then be just covered over with some light mellow soil, and watered. When they have made shoots about two inches long, take them up, and slice off each shoot with a penknife, together with a small piece of the tuber. Plant out these shoots in a flower-pot filled with sand, and keep them watered. They will soon establish themselves as young plants. When they have done so, remove them into the pots or border where they are finally to remain, and they will blossom in November and December.

The great object to be aimed at is, by every retarding process that can be adopted, to prevent the plants from opening their flowers till about the middle of December. This must be obvious to any one who has observed how often the same plant that has commenced blossoming with all but single flowers in November, will as the Cold season advances, produce them more and more double.

It is important that from an early period they be carefully supported with stakes, or they will be sure to be blown down and be destroyed.

About February, to facilitate the ripening of the tubers, discontinue watering. When the stems decay, cut them down to within an inch of the soil. Then take up the tubers carefully, so that the upper part of them, in which alone the eyes are situated, be not broken or injured. They should not be left exposed long to the air, or they will be apt to shrivel and perish ; but as soon as they are quite dry they should be laid in a gumlah, and be covered well over with dried earth, and stored away in a godown. "The buds or eyes," as Mrs. Loudon states, "are not scattered all over the tuber, like those of the Potato, but collected in a ring round the collar of the root, and when in a dry state are hardly perceptible. To discover them, nurserymen often plant the tubers in a hotbed 'to start the eyes.' Tubers are sometimes blind, and though put into the ground, and sending out abundance of fibrous roots for several years, still never send up a shoot." The surest way of obtaining plants that produce fine flowers is to procure tubers from Europe. These, however, wear out, and become almost valueless after two or three seasons. Seed sown in October will produce plants which come into flower in February, of which one perhaps out of some twenty may be considered worth keeping, and the rest as only fit to be pulled up and thrown away.

No plant is more easy of propagation by cuttings than the Dahlia. The tips of shoots nipped off and planted in a flower-pot half-full of river-sand, with a pane of glass laid over it, will almost to a certainty all strike, and soon form young plants.

#### Rudbeckia.

Herbaceous plants, bearing large, showy, but coarse-looking bright-yellow, ox-eye-daisy-like flowers. Best renewed from seed sown annually in October.

*R. triloba*.—A common weedy-looking plant, nearly always in blossom, with large yellow flowers, having a great ugly cone-shaped eye in the centre. Propagated by division.

#### Gaillardia.

*G. picta*.—An herbaceous perennial, of which there are several varieties ; an invaluable ornament for the garden, enlivening it all the Hot and Rain seasons with numberless large, bright,

marygold-formed, copperish-red and yellow flowers. Best renewed annually from seed.

### Achillea.

1. *A. Millefolium*—**MILLEFOIL**.—An herbaceous plant, always handsome for its graceful, divided, feather-like foliage; flowers rather small, very numerous, and of very long duration, pure-white, borne in large, compact, flattened heads. There is a variety with rose-coloured flowers. Propagated easily by division.

2. *A. nobilis*.—Also a handsome plant for its foliage, which, though quite distinct, somewhat resembles that of the last; flowers white.

### Chrysanthemum.

1. *C. Indicum*.—A common plant, native of this country, very showy, when in full blossom in November, with its profusion of bright, cheerful, golden-yellow, middle-sized flowers; does best in the open border, and requires little care bestowed upon it beyond removing it annually to fresh ground.

2. *C. Sinense*—**THE FLORIST'S CHRYSANTHEMUM**—*Gool-dáudee*—*Chundro-moolik*.—Of this delightful plant, so well known and so universally cultivated, and which during the months of November and December makes our gardens so gay, most of the handsome varieties may, I believe, be now met with at Calcutta: the largest, somewhat smaller than a Dahlia, very double, and pure-white; another somewhat smaller, of a clear-brimstone colour; and numerous others of different colours and character, from the size of a China Aster to that of a Bachelor's Button, or a Chamomile-flower, including those called Pompones and Chusan Daisies, as well as the Japanese, with their comical flowers, resembling a Cockatoo's tuft much disordered. Some varieties are of a much more robust habit than others, and require little or no care to preserve them; while very many are almost sure to perish, unless great care be taken to shelter them from extremes of sunshine and rain. And all, like the Daisy, are certain rapidly to deteriorate unless removed from time to time into fresh soil.

The only choice kinds to be met with in India are imported ones. At Chinsurah I raised a great many plants from English seed, but without securing a single specimen worth preserving.

There are three classes into which the varieties of this plant are distributed:—1. The Incurved, such as have their petals curved up towards the centre. “Reflexed flowers, or those with their petals curving downwards,” Mr. Dale says, “are now entirely rejected as Show flowers.”—2. The anemone-flowered.—3. Pompones.

The following is a list of what struck me as the largest and handsomest of those I saw in blossom in the Temple Gardens:—

Astrolabe, orange-nankeen; Bella Donna, delicate lilac; Beverley, ivory-white; Cherub, golden amber; Edwin Landseer, rosy ruby; Florence Mary, very bright salmon-red; Florence Nightingale, pale sulphur; General Slade, Indian red, tipped with bright orange; Globe, white; Gloria mundi; Golden Beverley; Golden Nugget; Hereward; Jamos Salter, a Japanese; Golden Hermine, golden orange, tipped carmine; Hermine, blush, tipped purple; Jardin des Plantes, bright golden orange; Lady Russell, blush lilac; Lady Slade, delicate lilac pink; Nil Desporandum, dark red; Nonpareil, rosy lilac; Oliver Cromwell, dark chesnut; Orlando, rosy buff; Pelagia, bright orange cinnamon; Prince Alfred; Prince of Wales, bright fiery red; Progno, crimson carmine; Prometheus, bright fiery-red salmon; Queen of England; Vesta, ivory-white.

The best way of treating the plant, as far as my experience goes, seems to be this:—About the beginning of January, or directly the flowers fade and become unsightly, cut the flowering-stems close down. Turn the plant out of its pot if it be in a pot, or if it be in the border dig it up. Remove the whole of the earth from its roots, and then pull it completely to pieces, by tearing apart each separate shoot and sucker. Prepare a piece of ground in a shady spot by digging it up and rendering it mellow with a mixture of old manure and a little sand. Put down the shoots and suckers in the manner of cuttings in rows a foot apart, and a foot between each shoot in the row. Water them daily, and they will soon establish themselves and grow with great vigour; and, by the end of May, become large plants with numerous ground-shoots. They should then be taken up, and the shoots pulled apart at the roots, and each separate shoot planted singly in moderate-sized pots, in which they may remain under shelter from the heavy rains till October. They should then be repotted into ample-sized pots and a new soil. Some few left in the border will survive all extremes of weather, but the safer plan is to put all that room can be found for under shelter.

The Chrysanthemum is subject in the Cold season to the

ravages of a large white beetle-maggot, which preys upon the roots, and eats away the whole of their fibrous parts, thus eventually destroying it. When a plant under proper cultivation appears in a languishing state it may often be referred to this cause, and it should be turned out of its pot, examined, and repotted in entirely fresh soil.

The Chrysanthemum is a coarse-feeding plant, and requires a good rich soil and abundance of water; it is benefited by repeated applications of liquid manure, and also, it is said, of soap-suds.

Mr. Fortune has described the method of cultivation adopted by the Chinese, which, he says, brings the plant to great perfection. One peculiarity in their treatment consists in a liberal use of night-soil, and in planting them at once in large pots. "The plants," he states, "are trained each with a single stem. This is forced to send out numerous laterals near its base. These are tied down in a neat and regular manner with string of silken thread. By having the plants clothed with branches in this way, and by keeping the leaves in a green and healthy state, the specimens never have that bare and broom-headed appearance which they often present in England."\*

To obtain unusually dwarf specimens, Sir J. Paxton says:—"Directly the flower-buds are formed, the tops of the shoots producing them are cut off at any desired length and planted in sandy loam. They will form adequate roots and flower as well as those not decapitated. We have them not more than six inches high."† This however is a proceeding, I believe, not always found successful, and is rarely resorted to. The specimens exhibited in the English shows have usually their stems from five to even seven feet high.

### Artemisia.

1. *A. Abrotanum*.—**SOUTHERNWOOD.**—The old familiar shrub of our English gardens, so much used in bouquets for the agreeable fragrance of its leaves; not uncommon in the gardens of Calcutta, where, however, it attains only to a small size, and is generally grown in pots. Propagated by slips.

2. *A. lactifolia*.—Sometimes misnamed *A. odoratissima*.—An herbaceous plant, at all times pleasing for the peculiar whitish

\* 'Tea Districts of China,' p. 124.

† 'Bot. Mag.' vii. p. 191.

hue of its foliage; continues in blossom all the Cold weather, when a clump of it looks remarkably beautiful with its heads of densely crowded, small, milk-white flowers, which, in the heat of the day, diffuse a most delicious fragrance for some distance around. Easily propagated by division of roots.

#### *Crossostephium.*

*C. artemisioides*.—A curious dwarf shrub, remarkable for the strong vitriolic odour of its small whitish-green leaves; affords, on account of its very peculiar foliage, a pleasing variety among other pot-plants; bears a profusion of clumps of small, dingy-yellow flowers. Propagated by seed, which it bears abundantly.

#### *Cineraria.*

It is utterly vain to attempt to cultivate the choice florists'-plants of this genus in the plains, otherwise than as annuals in the Cold season. Young plants may be raised from seed in October, some of which will perhaps come into blossom, though never very satisfactorily, just as the Hot weather commences, after which time all are sure to perish.

#### *Cacalia.*

1. *C. carnosa*.—An herbaceous plant, a common weed in some parts of India, with fleshy leaves of a pallid-green hue; flowers greenish-white, of no merit whatever.

2. *C. hieraceoides*.—An herbaceous plant; bears flowers not unlike those of the Sow-thistle, and not at all more interesting.

### COMBRETACEÆ.

#### *Poivrea.*

1. *P. coccinea*.—A large climbing shrub with very slender stems; requires the support of a trellis; almost constantly in blossom with a profusion of small, bright crimson flowers, borne in large compact brush-like bunches, beautifully relieved against the bright, cheerful, glossy green of the foliage. One of the handsomest and most prized ornaments of our Indian gardens.

Propagated by layers, which usually take a long time before rooting. Mr. Mackintosh says that it should be grafted on *Combretum Pinceanum*, or some other free-growing species.

2. *P. Roxburghii*.—A powerful rambling shrub, overgrowing a great extent of space; bears in January brush-like trusses of dingy-white flowers of no attractiveness.

### *Combretum.*

Several species of this genus of noble scandent shrubs are now found commonly enough in the gardens about Calcutta; all those, however, of an ornamental kind are seemingly of recent introduction. They are apt to become rampant, and are benefited by being well cut in when the time of flowering is over, and bloom the better for it afterwards. They are propagated by layers, which are sometimes slow in rooting. Cuttings here do not succeed, and some difficulty in striking them appears to be met with in England likewise, for a writer in the 'Gardener's Chronicle' observes:—"This arises from not selecting fit pieces for cuttings, for short-jointed firm bits of young wood, treated in the ordinary manner, root freely. These are easily obtained from pot-bound specimens." Some bear seed abundantly, from which plants may be readily raised, but these will take four or five years at least before coming into bloom..

Mr. Mackintosh says:—"As soon as the young wood has ripened, and the leaves begin to fall, the lateral shoots should be cut back to within one bud of the base, and if the spurs thus formed along the main stem become too crowded, they should be thinned out to a foot apart. By this means *C. grandiflorum* has been made to bloom, which is one of the shyest flowerers of the genus." \*

1. *C. comosum*.—A large climbing shrub, admirably adapted for covering an arbour or archway; forms a delightful ornament during the Cold season, when a perfect mass of bloom with its countless large, compact, brush-like clusters of bright-crimson flowers.

2. *C. rotundifolium*.—A large rambling shrub; bears dull-white flowers, not at all interesting.

\* 'Book of the Garden,' vol. ii. p. 717.

3. *C. grandiflorum*.—A rambling shrub, of very powerful habit; requires a vast deal of room, and a very robust support to grow upon; bears in November, in great profusion, trusses of fine deep-crimson flowers.

4. *C. macrophyllum*.—In every respect a truly noble plant; nothing can surpass it in magnificence and beauty when in full bloom in February and March; the very large, laurel-shaped, wavy, blackish-green leaves of themselves render the plant very handsome and desirable. It has the advantage also of being less rampant in growth than other species; flowers borne in moderate-sized brush-like bunches of the most vivid deep-carmine, admirably relieved by the dense, dark, grand foliage.

5. *C. Pincianum*.—A shrub of considerable size, described by Sir J. Paxton as bearing “panicles of flowers a foot-and-a-half long of a red or purplish-red colour.” With this description the plants so named in the Calcutta Botanical Gardens do not altogether correspond, as the flowers they produce are of a light vermillion or cinnabar colour. Blossoms in February, when almost leafless, becoming then an entire mass of bloom with its large compact sprays of numberless trusses of flowers.

6. *C. densiflorum*.—A noble scandent shrub, with large handsome leaves; bears fine trusses of beautiful crimson blossom in the Cold season.

7. *C. Wightianum*. 8. *C. Chinense*. 9. *C. acuminatum*.—These last three are large rambling shrubs, bearing whitish flowers, not sufficiently ornamental to entitle them to a place in the garden.

#### *Quisqualis.*

Q. *Indica*.—An extensively-growing scandent shrub, requires a strong trellis for its support; bears, during the Hot and Rain seasons, in constant succession, profuse clusters of flowers of middling size, at first white, but turning on the following day to a blood colour. This mixture of the two different-coloured flowers gives it a very charming appearance. In a good soil it becomes of very rampant growth, and is then rather unmanageable: should be well cut in in the Cold season. Propagated by layers.

## ONAGRACEÆ.

## Jussiæa.

*J. villosa*—PRIMROSE WILLOW.—A shrubby herbaceous plant, two or three feet high; bears rather large, four-petalled, evening-primrose-like flowers, of a pale dull-yellow colour, not very ornamental. Propagated from seed, which it bears in abundance.

## Œnothera.

*Œ. Drummondi*—EVENING-PRIMROSE.—A very showy and beautiful species, and a charming ornament to the garden; bears, throughout the Hot and Rain seasons, a constant succession of large bright-yellow blossoms, which are open not only in the evening, but continue so during a great part of the day: though perennial, it is best renewed from seed yearly in October.

## Fuchsia.

No plant of this genus has ever been found able, on the plains, to survive beyond just the commencement of the Hot season. Specimens have occasionally been shown in Calcutta blossoming in the Cold weather, but these have in every instance, I believe, been brought down, just at the close of the Rains, from the hills.

## BELVISIACEÆ.

## Napoleona.

*N. imperialis*.—A shrub of handsome growth and Camellia-like appearance; native of Sierra Leone; fine, handsome plants were in the Calcutta Botanical Gardens, in the open ground, as well as in Mr. Grote's garden at Alipore, where they bore in March and April, close upon the stems, and all but hidden by the leaves, their not very showy flowers, which are of an apricot-orange colour, and somewhat like those of a Passion-flower. It is easily multiplied by cuttings.

## MELASTOMACEÆ.

## Centradenia.

**C. floribunda.**—A small herbaceous pot-plant, native of Mexico, with dark-red stems and narrow lanceolate leaves, from an inch to an inch-and-a-half long ; bears from February to March a profusion of small rose-coloured flowers, at which time it is a tolerably pretty object, resembling one of the annuals in bloom. Cuttings strike easily. \*

## Arthrostemma.

**A. lineatum.**—A pot-plant, native of Peru, with elliptical rough leaves, one to two inches long : in my opinion of no great merit, though considered choice by some; bears in the Cold season, rather profusely, largish heads of dingy-white flowers of moderate size. Propagated by removal of suckers.

## Pleroma.

**P. trinervia.**—A choice and delicate pot-plant, of woody habit, but of small growth ; very ornamental if only for its rich-green peculiar foliage ; bears during the Hot months handsome pale-purple flowers, of moderate size. Propagated by cuttings under glass.

## Melastoma.

**1. M. Malabathricum.**—A small shrub, similar in character to the last, but of larger habit, and loose and untidy in its mode of growth ; a rather delicate plant, requires to be grown in a pot ; bears in the Cold season large pale-blue flowers ; produces seed abundantly.

**2. M. sanguineum.**—Bears in the Cold weather purplish-blue flowers, in all other respects very similar to the preceding ; occasionally yields seed, from which young plants may be raised.

## Osbeckia.

A genus containing many handsome plants with the peculiar characteristic three-ribbed leaves of the Melastoma and Pleroma, and producing beautiful flowers very similar to theirs ;

many species are natives of our Indian hills, but none, that I am aware of, able to endure the climate of the plains.

#### Medinilla.

*M. vagans*.—A small pot-shrub, very handsome from its dark rich glossy leaves; bears small crimson flowers, very numerous, and somewhat like those of an *Ardisia*, seemingly not opening well. A rare plant.

#### Sonerila.

*S. margaritacea*.—A lovely small pot-plant, with oval-pointed polished dark-green leaves, marked with rows of pearl-like spots, and with deep-red stems; bears numerous small pretty three-petalled pink flowers, with showy yellow anthers. Native of the hills of India, and has been exhibited at the Calcutta shows, but is a very rare plant. Several other species are met with in Assam.

#### Cyanophyllum.

1. *C. Burmanni*.—Suited only for the Betel-house; as well as
2. *C. magnificum*, with leaves of exquisite beauty, deep-green, velvety above, with three white nerves, and violet-purple beneath; one of the grandest of ornamental-leaved plants.

#### Memecylon.

1. *M. tinctorium*.—A large woody shrub, or small tree, native of the jungles of India; a very beautiful ornament to the garden for its cheerful glossy foliage, as well as for its flowers; blossoms in March with very small, fragrant lilac flowers, cleaving to the stems in compact little bunches, and covering them in boundless profusion. Propagated by layers and by seed.

2. *M. capitellatum*.—Differs from the preceding only in that its leaves are smaller, and that it is somewhat later in its period of blossoming.

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#### MYRTACEÆ.

##### Melaleuca.

*M. Cajeputi*—CAJEPUT OIL-TREE.—A moderate-sized tree with pleasing, dark, evergreen, willow-like foliage, forming an

agreeable contrast with the ashy-grey colour of its withered-looking bark. In much esteem among the natives, who make use of the large flakes of inner bark, which are easily torn off, for inscribing their sacred writings upon; bears small whitish flowers of no interest. Produces seed abundantly, which when sown by hand is rarely found to germinate, though numerous plants spring up self-sown around where the tree stands.

### Eucalyptus.

#### GUM-TREE.

A genus of ornamental trees, natives of the Cape and New Holland. Some thrive upon the Nilgherries, but none have been found capable of enduring the climate of the plains.

### Callistemon.

A genus of small trees, of which Don writes, "All are worthy of cultivation from the neatness of their foliage and beauty of their blossoms, especially those with splendid flowers of crimson and scarlet."

1. *C. linearis*—AUSTRALIAN BOTTLE-BRUSH.—A small tree of willow-like foliage, remarkably beautiful in April, when in blossom, with its numerous bottle-brush-like tufts of brilliant crimson flowers.

2. *C. salignus*.—An extremely handsome and graceful tree-shrub of willow-like foliage, the leaves emitting, when bruised, a myrtle-like odour. Very pretty when in blossom in April and May, with its numerous small white flowers.

### Punica.

1. *P. Granatum*, fl. pl.—THE DOUBLE-FLOWERED POMEGRANATE—*Anár*.—The splendid large vermillion-coloured blossoms of this shrub render it a fine ornament, especially in a large garden, when seen from a distance. The shrub itself, independent of its flowers, is anything but a pleasing one, and, without attention given to the pruning of it, becomes very straggling and unsightly. Sir J. Paxton says, "All flowers are produced at the extremities of the young branches formed the same year;

cut away, therefore, all the weak branches of the former year, and shorten others according to their strength." Propagated from seed or by removal of suckers.

2. *P. nana*—THE DWARF DOUBLE-FLOWERED POMEGRANATE.—A pretty pot-shrub about a foot in height; a great improvement upon the preceding, of which Mrs. Loudon says, without doubt it is only a variety. There is said to be likewise a double white variety, but this I have never met with in India.

### Myrtus.

1. *M. communis*—COMMON MYRTLE—*Bilætee Menhdee*.—This old familiar and most agreeable shrub thrives well in all parts of India, but better in the North-West, I think, than in Bengal. In neither locality it attains to a very great size. It bears its pretty small white flowers, succeeded by its blue-black berries, in the Cold season. Propagated by layers.

2. *M. tomentosa*.—A handsome shrub, native of the Nilgherries, bearing a profusion of pink blossoms somewhat resembling those of the Peach. Mentioned in Dr. Voigt's catalogue, but, possibly from the climate being unsuited to it, not existing now in the Calcutta Botanical Gardens.

### Caryophyllus.

*C. aromaticus*—THE CLOVE—*Lóng*.—Native of the Moluccas, where it grows to a rather large tree. Don says, "It is difficult to transplant. Seeds are usually sown where trees are intended to remain; for if the roots are once injured, it is seldom they recover." Dr. Voigt states that "in Bengal it can scarcely be kept alive throughout the year." Plants, however, I have been credibly informed, may be found in one or two gardens in Calcutta as much as four feet high or more.

### Eugenia.

1. *Eu. Pimenta*—ALLSPICE.—Grows to a tree of considerable size; but small shrubby plants are common in the Calcutta gardens, and are very desirable for their ornamental bright foliage, and for the fine fragrance of the bruised leaves.

2. *Eu. ugnea*.—An ornamental shrub with large fragrant leaves.

**3. Eu. Zeylanica.**—A pretty shrub, with flowers and foliage in every respect resembling those of the Myrtle, but larger.

### Jambosa.

**J. Malaccensis.**—In all respects a very ornamental tree, with large, handsome, laurel-formed, dark, glossy leaves, which relieve superbly the fine bunches of flowers with their numerous long crimson filaments; very striking also when covered with its beautiful fruits. Propagated by seed.

### CACTACEÆ.

A rather numerous group of succulent plants, of which Dr. Lindley remarks: "America is the exclusive station of this order, no species appearing to be a native of any other part of the world." Some, however, must have been introduced into India at a very early period, as they are now naturalised in the jungul in nearly all parts of the country. Of *Echinocactus*, *Mammillaria*, *Cereus*, and *Opuntia*, the number of species is very great, most of which would in every probability thrive in India with proper care. The number of species we possess is comparatively small, but as large perhaps as there is any need of for the adornment of our gardens; for they are more curious than ornamental, and it is not desirable to possess many of them. To dispose them to blossom, they should be allowed a certain amount of exposure to the sun, particularly after their season of growth is past; but some of the smaller and more delicate kinds, if put out entirely in the sun, are apt to become scorched, and to shrivel. These, too, are very liable to rot, if left exposed to the wet during the Rains. With regard to the nature of the soil best suited to them, Mr. M'Intosh observes:—

"A very erroneous notion has prevailed that succulents should be planted in lime-rubbish, gravel, or similar porous matter, with a view to prevent them from growing too rapidly, and also that they should scarcely have any water given to them. Succulent plants in general do not require much water when in a dormant state; but when they are growing vigorously, they require as large a share of that element as any other plants not exactly aquatic. The free-flowering Cactæ should be placed in the

richest possible soil, but at the same time it must be capable of admitting the water to pass through it freely, and for that reason may have a portion of lime-rubbish, broken pots, or small pieces of broken bricks mixed with it, to keep it open and porous. Poor sandy soil should be discarded, and even peat earth is not rich enough for these plants." \*

They are very tenacious of life; a single joint may be conveyed almost any distance without detriment, and will strike upon being inserted in sand and kept moderately watered. In England those of a spheroidal form are sometimes grafted upon stocks of *Pereskia aculeata*, by making a small hole in their base and placing it upon the stem of the *Pereskia*, sharpened to a point, and binding a little moss round the place of juncture of graft and stock.

### **Melocactus.**

#### **TURK'S-CAP, OR MELON-SHAPED CACTUS.**

A name significant of the form of the plants, which produce their flowers on a head covered with dense woolly and bristly hairs. *M. erectus* is in the Botanical Gardens. Others noted as most worthy of cultivation are:—*M. depressus*; *Grellii*; *macracanthus*; *polycanthus*; *pyramidalis*; *Sellowii*.

### **Mammillaria.**

#### **NIPPLE-CACTUS.**

Described as "dwarf plants composed of an assemblage of tubercles, somewhat resembling the teats of animals. These are generally terminated with bunches of hairy bristles, and between them the flowers appear." † To me they rather look like, as regards form, a cluster of small Gherkins. The few that our gardens contain, so far as I am aware of, are:

1. *M. tenuis*.—Pretty and delicate-looking from its club-like lobes being hoary with bristles. Suited to a pot of about the size of a tea-cup. Flowers described as pale yellow.

2. *M. pusilla*.—Resembles a little heap of balls of worsted; flowers described as pale red.

3. *M. longimamma*.—Lobes or tubercles long and thin, like a

\* 'The Greenhouse,' pp. 182 and 186.    † 'Cottage Gardener's Dictionary.'

man's little finger; quite smooth, surmounted with a starry head of bristles. "The flowers" are described as "produced on the summits of the stems, and the largest and most beautiful of any of the genus, opening in the sun: the interior divisions of a brilliant yellow, the exterior reddish." \*

Others mentioned of especial merit are—*M. atrata*; *Andreae*; *carnea*; *cirrhifera*, *spinis fuscis*; *coronaria*; *depressa*; *fulvispina*; *Karwinskii*; *mangnimamma*; *quadrispina*; *sphacelata*; *Wildiana*.

### Echinocactus.

#### HEDGEHOG-THISTLE.

Curious prickly globular-formed plants.

1. *E. Echidne*.—Of curious growth, resembling a ribbed Melon, of the size of a cricket-ball, with star-like arrangements of thorns along the ribs; bears in February pretty, delicate, pinkish-white flowers, of the size of a Daisy, and somewhat like those of a *Mesembryanthemum*, in little groups near the summit of the plant.

2. *E. multiplex*.—Described as bearing flowers of a delicate flesh colour, as large as the plant itself, which is of a balloon form. In the Botanical Gardens are likewise:—3. *E. Williamsii*. 4. *E. hexadrophorus*; 5. *E. notophorus*; 6. *E. platycerus*; 7. *E. Eryresii*. Mentioned also as especially deserving of cultivation are:—*E. echinatus*; *densus*; *Gilliesii*; *imbricatus*; *latispinus*; *Mackieanus*; *Montevidensis*; *parvispinus*; *platyacanthus*; *scopa*; *spinis albis*; *subgibbosus*; *tenuispinus*; *tubiflorus*.

### Cereus.

#### TORCH-THISTLE.

Curious thorny, long-stemmed, strong-growing plants, demanding very little care in their cultivation. The soil best adapted for them is a mixture of vegetable-mould and decayed cow-dung well intermixed with crocks and broken bricks.

1. *C. eriophorus*.—A climbing plant, curious for the woolly kind of substance with which the stems are covered.

• 2. *C. grandiflorus* — NIGHT-BLOWING CEREUS.—Mr. Gosse writes:—"The magnificent flowers are seldom seen. The plant

\* "Le Bon Jardinier," pour 1866, p. 567.

seems a shy bloomer. In order to see it in perfection one must see it open at midnight. Cut a few inches of the stem on each side of the maturing bud, and bring within doors. Soon after dark it begins to open, and towards midnight expands its noble beauty; a disk six inches in diameter, very double, pure-white in centre, exterior yellow-brown, most deliciously fragrant of clove perfume. In the morning beauty and fragrance are gone." In this country it is neither a rare plant nor a shy bloomer, but from the immense size to which it grows is only admissible in a garden of great extent. Its flowers may be witnessed in perfection at daybreak, and for some little time after. The flowers, it is said, may be preserved in full beauty for a long time if the pistil be removed before impregnation.

3. *C. speciosissimus*.—This also, seen in the night, when in full blossom, is said to be an object of almost unrivalled splendour.

4. *C. nycticallus*.—A climber, requiring an extensive kind of support for its thin long-jointed stems, which throw out numerous fibrous roots, whereby it adheres to a wall or trunk of a tree, against which it may be planted; bears in May very large white flowers, which open in the night and perish at the dawn.

5. *C. hexagonus*.—A very common plant of the size of a large shrub, with stout six-ribbed stems; bears during the Rains a succession of numerous large white flowers in the night-time, which perish soon after day-light.

The names of others found in our gardens, but calling for no particular description, are :—6. *C. triangularis*.—A climber; very common. 7. *C. tetragonus*; 8. *C. Bonplandi*; 9. *C. Jamaicensis*; 10. *C. loranthoides*; 11. *C. multangularis*.

### *Epiphyllum.*

A genus of plants with stems resembling a combination of irregular-edged straps or ribbons growing out of each other in succession.

1. *E. Hookeri*.—A plant of considerable size, requiring a large pot; grows very rapidly, and is apt to let droop its long flat stems over the ground and look very untidy; bears during the Hot and Rain seasons numerous very large star-formed, white flowers, comprising very many long narrow petals. These open in the evening and perish the following morning. At Feroze-

pore I had plants which throve vigorously, and grew to a great and unmanageable size, but never blossomed, which is surprising, as the plant blossoms so freely in Bengal.

2. *E. truncatum*.—This, of which we possess three varieties, bears in the Cold weather large gorgeous flowers of a clear bright pink or rose colour, which, unlike those of so many of the order, have the merit of displaying their beauty in the day-time. A very delicate and fragile plant, soon broken to pieces if not sheltered from the wind or any rough treatment; thrives in a soil of silver-sand with the admixture of a little vegetable-mould. The largest specimens will not require a pot of larger size than a sugar-basin, which for safety's sake it is well to insert in a larger pot filled entirely with crocks, whereon the drooping fragile stems may rest without fear of rotting. From its delicate habit it requires to be kept in the shade, but possibly a certain amount of exposure to the morning sun would be beneficial. Any small piece broken off and inserted in the soil will take root. But Sir J. Paxton says, "To obtain young specimens keep a little damp moss round any of the branches, and roots will speedily be found at the place." In England, as a matter of curiosity, it is sometimes grafted upon *Pereskia*. A young stem of the latter has its head cut off and a small slit made. In this the flat stem of the *Epiphyllum* is inserted, and the graft tied round with a little moss. The attempts made to effect this in this country I have never known to prove successful; which is of the less consequence, as it is considered preferable to grow the plant on its own roots.

3. *E. alatum*.—A plant similar to but of stouter habit than the preceding. I have not seen it in blossom. Flowers said to be white.

#### Rhipsalis.

*R. salicornoides*.—A curious plant, with short jointed stems, growing successively upon each other like small pieces of tobacco-pipe united. Flowers small, yellow, and in no way interesting. Dr. Voigt states that they "never appear here." I have, however, seen the plant in blossom in the Calcutta Botanical Gardens, as well as at the Horticultural shows here. In its native locality it is epiphytal; the growing of it in pots is probably the cause of its being so shy of blooming.

*Opuntia.*

## INDIAN FIG, OR PRICKLY CACTUS.

There are several species of this genus of singular plants, which produce their large oval-formed, thick, flat leaves, one from the edge of the other, and are usually covered with star-like arrangements of sharp bristles. Most bear large golden-yellow flowers of metallic hue, but upon the whole are not objects sufficiently agreeable to be allowed a place in the garden.

*Pereskia.*

1. *P. Bleo*—BARBADOES GOOSEBERRY.—A large spreading shrubby plant, with cylindrical stems covered with long needle-like spines, and, unlike most plants of the order, bearing abundance of leaves. Flowers very pretty, resembling small single pink roses; nearly always in blossom.

2. *P. aculeata*.—In general appearance much resembling the foregoing, but a smaller plant. Dr. Voigt states that this species blossoms in Bombay, but not here, and in England very seldom. I have not seen it in blossom myself, but the native dealer from whom I obtained specimens at Hooghly assured me that it blossomed in the Cold weather. Flowers described as white.

## GROSSULARIACEÆ.

*Ribes.*

*R. rubrum*—THE FLOWERING RIBES.—This shrub, so beautiful an ornament in our English gardens, is only mentioned here to intimate the improbability of its ever being brought to thrive in this country.

## ESCALLONIACEÆ.

*Escallonia.*

*E. macrantha*.—A beautiful rich-green shrub, bearing bright-pink fragrant flowers. This very choice plant succeeds with difficulty even in the elevated region of Bangalore. There is little probability of its living in the lower plains of India.

*Itea.*

*I. Virginica*.—Don says, “When this shrub is in vigour it is entirely covered with racemes of white flowers, and then makes a fine appearance.” Dr. Voigt mentions it in his Catalogue as at that time lately introduced. It is quite unknown in the Government Botanical Gardens now.

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## PHILADELPHACEÆ.

*Philadelphus.*

*P. coronarius*—*SYRINGA*—*MOCK ORANGE*.—This shrub, so common in English gardens, and well known for its fragrant cream-coloured blossoms, similar to those of the Orange, may be found in existence occasionally in India, but only in the most stunted and unthriving condition.

*Deutzia.*

*D. scabra*.—A shrub much resembling the preceding; bears its delicate white flowers in terminal racemes. “When large and in full bloom,” Sir J. Paxton says, “its beauty can hardly be imagined by those who have not seen it.” A tolerably common plant in Calcutta, where it thrives moderately well, but far from realises the above high estimate of it; it is apt to throw up numerous suckers, which should be removed.

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## BARRINGTONIACEÆ.

*Barringtonia*.

1. *B. speciosa*.—A tree notable for its large handsome character of foliage; bears great heads of blossom, with large flowers made up of a numerous assemblage of long deep-rose-coloured filaments, and which have been likened to painters’ brushes; native of the Straits, and said to love the shore of the sea; hardly, if at all, known in our gardens here.

2. *B. racemosa*.—A stout timber-tree of similar character to the preceding. Major Drury remarks, “when in flower it has a

most beautiful appearance from its long pendulous racemes of rose-coloured flowers; commonly to be met with along the banks of the backwaters in Travancore." Little known, I believe, on this side of India.

*3. B. acutangula*.—A large timber-tree. "Grows," Roxburgh says, "to resemble a middle-sized well-shaped oak, and bears at the beginning of the Rains long pendulous racemes of scarlet flowers." Common in most parts of India.

#### Gustavia.

*G. augusta*.—A small but stately tree, allied to the preceding, with magnificent foliage, the leaves being a foot or more long, of oblong form, of a fine dark glossy green. A single plant of it flourishes in the Calcutta Botanical Gardens.

### VACCINIACEÆ.

#### Thibaudia.

*T. setigera*.—Sir J. Paxton observes, "A truly magnificent and interesting shrub; native of India. At its roots are immense thick fleshy nodosities, which coil round the trunks of trees on which they fix, or adhere to some portion of rock in a surprising manner. Any light soil suits it. Its small fibrous roots should only just be covered." Occasionally met with in the Calcutta gardens. Comes into blossom in January and February with clusters of very rich and handsome tubular red flowers, in form like those of a Heath, an inch long; the leaves resemble those of the Oleander, but are smaller.

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### CINCHONACEÆ.

#### Serissa.

*S. foetida*.—A very pretty small shrub, about two feet high, with very small dark-green shining leaves; native of China; nearly always in blossom with its sparkling very double white flowers, of the size of a shirt-button, which, when bruised, emit a detestable smell. Single-flowered specimens are also to be met

with, but not so common. Easily propagated by slips or cuttings, or, it is said, by cuttings of the roots.

#### **Psychotria.**

1. *P. undata*.—A shrub of moderate size, with foliage of a pale lurid green; bears in April and May compact heads of greenish-white flowers; not an agreeable plant.
2. *cyanococca*.
3. *Chontalensis*.

#### **Coffea.**

1. *C. Bengalensis*.—A small shrub, exceedingly beautiful in the month of February, when in full blossom, with its pure white flowers, similar to but smaller than those of the White Periwinkle, in such countless profusion as to produce a most brilliant effect in the border.

2. *C. Arabica*.—THE COFFEE-PLANT.—*Kuhwa*.—A much larger and taller-growing plant than the last; bears flowers somewhat similar, but rather scantily, and is not nearly so interesting in an ornamental point of view.

#### **Pavetta.**

A genus of plants in general appearance hardly distinguishable from the Ixoras.

1. *P. Indica*.—A large jungul shrub, with large laurel-form, dark glossy-green leaves, with white midrib. Its foliage is its principal point of beauty; bears in February trusses of dirty-white rather fragrant flowers.

2. *P. tomentosa*.—A large coarse shrub; bears loose heads of white flowers of little merit otherwise than for their fragrance.

3: *P. Richardiana*.—A shrub with small neat foliage; bears small white flowers of not much merit.

4. *P. diversifolia*.—A single plant of this, introduced from the Mauritius, has been for some years past in the Calcutta Botanical Gardens, where it seems to thrive well; remarkably ornamental for its large laurel-form, glossy leaves, which when young are beautifully marbled.

#### **Ixora.**

A genus that comprises several of our most beautiful flowering shrubs, the splendour of which, when in the full perfection

of their bloom, nothing can surpass. During the time they are in bloom an occasional application of liquid manure will be found beneficial, and after they have done blooming they are the better for being pruned in closely. Some yield seed freely, from which young plants may be easily raised; and all may be propagated more or less easily by cuttings or by layers put down in the Rains.

A writer who signs himself "Alpha" says:—"All the varieties are easily propagated by cuttings; but some of them, as *salicifolia*, *Griffithi*, and *acuminata*, are so wanting in the tendency to form bushy plants, that well-furnished specimens of them can hardly be obtained save by grafting them on good-sized well-bottomed plants of some better-habited variety. *Coccinea* is, judging from my own experience and observation, the best for grafting upon. I also graft *floribunda*, which although of a sufficiently bushy habit, is rather delicate, and but a slow grower on its own roots. *Acuminata* throws very large heads of bloom; and I expect that, grafted on *coccinea*, it will form fine specimens, and be more effective than *alba*." \*

1. *I. acuminata*.—A shrub five or six feet in height. Dr. Roxburgh describes it as "a very charming shrubby species, native of the forests near Sylhet, where it blossoms during the Hot season, and perfumes the air with the fragrance of its flowers." And Dr Wallich adds: "The opaque, remarkably pale and glaucous leaves, the subsessile crowded corymbs of large white blossoms, with white calyces, sufficiently distinguish this elegant shrub from all the other species."

2. *I. alba*.—A small shrub, native of China, with handsome rich foliage of lanceolate leaves, from three to six inches long; generally considered a variety of *I. stricta*. One of the most choice and beautiful plants of the whole genus; bears its large full close corymbs of milk-white scentless flowers in great profusion during the Hot and Rain seasons, but in highest perfection in the months of March and October. Bears no seed, but may be propagated with little difficulty by layers or cuttings.

3. *I. Bandhuca*.—A round bushy shrub, of moderate size, about the commonest of the genus; distinguished from *I. coccinea*, which it resembles, by the leaves ending in a blunt oval form, and by the close way in which their heart-formed base embraces

\* "The Florist and Pomologist," vol. for 1863, p. 45.

the stem; bears its compact beautiful corymbs of fine scarlet flowers throughout the whole year, but in perfection during the Rains. It requires to be pruned in about November, or it is apt to become straggling and unmanageable. May be propagated by seed, which it bears abundantly in the Cold season, or by layers and cuttings, which in the Rains root with the greatest readiness.

4. *I. barbata*.—A shrub of very large growth, with fine rich, deep-green, lanceolate leaves, nearly a foot long; bears in the Hot season large, lax, irregular corymbs of long-tubed white fragrant flowers, singular for the fringe of white hair round their mouths. Produces seed in the Cold season.

5. *I. brachiata*.—A stout not very ornamental shrub; bears in March panicles of minute white flowers. Seeds in May.

6. *I. coccinea*.—A shrub about three or four feet in height, about the commonest, and certainly about the most beautiful of the genus. Flowers bright scarlet, in large, compact, handsome corymbs; nearly always in blossom, but in perfection during the Rains, when it is a truly splendid object. Nothing can be finer than the contrast afforded by the glowing scarlet trusses of bloom against the dark rich bay-green of the leaves. Yields seed in the Cold season.

7. *I. crocea* or *crocata*.—A choice shrub of the English stoves; bears handsome trusses of fine orange-coloured flowers. Unknown in this country.

8. *I. cuneifolia*.—A shrub of tree-like growth; bears in March and April a profusion of compact balls of pure-white fragrant blossom, of the size of an Orange, which present a truly delightful appearance as they wave to and fro by the force of the wind. Ripens seed in September.

9. *I. grandiflora*.—Sir J. Paxton says is only a large-flowered variety of *I. coccinea*.

10. *I. superba*.—The proper name of the plant, misnamed *I. grandiflora*, in the possession of some two or three gentlemen in Calcutta; native of Assam; from not more than about a foot-and-a-half to three feet in height; extraordinary for the immense size of its leaves, and when in blossom in April with its huge head of white flowers, very suggestive of a great over-blown Cauliflower.

11. *I. fulgens*.—Dr. Roxburgh observes:—"This elegant,

highly ornamental shrub is a native of the Moluccas, and from thence was introduced into the Botanical Gardens, where it blossoms most part of the year." Has smooth lanceolate leaves from six to eight inches long, and bears corymbs of numerous long-tubed, pretty, large, scarlet flowers.

. 12. *I. hydrangeæformis*.—Discovered by Mr. Griffith at Singapore, and described in Curtis as a noble shrub, with fine lanceolate leaves a foot long, producing handsome trusses of rich yellow and orange-coloured flowers, superior either to those of *I. coccinea* or *I. stricta*. Not to be met with anywhere about Calcutta that I am aware of.

13. *I. incarnata*.—A small choice shrub, native of China, with fine dark-green foliage: considered, like *I. alba*, a variety of *I. stricta*; nearly always in blossom with corymbs of pretty flesh-coloured flowers. Propagated only by inarching: cuttings and layers do not succeed.

14. *I. sp. ex Java*.—A species so denominated in the Calcutta Botanical Gardens: a handsome shrub of moderate size; bears at the beginning and end of the Hot season a great profusion of large trusses of creamy-white fragrant flowers.

15. *I. Javanica*.—A small shrub, accounted one of the very finest of the genus; but such as are met with in the Calcutta gardens are very far from meriting that high rank. It suffers during the Cold months, and young plants at that period can with difficulty be kept alive. Distinguished by having leaves softer and less rigid than others of the genus; bears during the Rains compact corymbs of orange-scarlet flowers, rather inclining to an apricot colour. Sir J. Paxton remarks that this plant is remarkably handsome from "the younger branches being of a rich coral colour, the tube of the corolla an inch and a half long, and the limb an inch across:" points as regard size and colour not found in the plants we have here.

16. *I. lanceolaria*.—A shrub about five or six feet high, remarkable for its narrow leaves, six inches long, and one broad; bears in the Hot season greenish-white flowers, and seeds at the beginning of the Cold season. Dr. Wallich observes:—"This species is so distinct from all the others, as to be easily known. Its slender hanging branches, pallid and glaucous leaves, and the small corymbs of crowded flowers, contribute to render it a very ornamental plant in the shrubbery."

17. *I. longiflora*.—A handsome lanceolate-leaved shrub; bears, in August and September, lax corymbs of exquisitely-fragrant white flowers, with exceedingly long tubes.

18. *I. opaca*.—A large shrub, compared with other species, of rather coarse appearance; bears large corymbs of very fragrant white, flowers, before opening, prettily tipped with red.

19. *I. parviflora*.—A small tree; bears in March small dingy-white, somewhat fragrant flowers. Not attractive when in flower, and far from being so at any other time.

20. *I. Ragoosula*.—A species so-called in the Agri-Horticultural Society's Gardens, but whence the name is derived, or of what it is the corruption, I have in vain endeavoured to discover. A most delightful erect shrub, about four feet high, not bushy, with smooth oblong leaves, about three-and-a-half inches long; bears in constant succession, almost throughout the whole year, small pretty corymbs of delicate rose-coloured flowers. Propagated easily by cuttings.

21. *I. rosea*.—A shrub about five feet high, of spreading habit, with oval, smooth, firm leaves, about six inches long; flowers of the same colour as those of the last, but larger, and in larger loose corymbs. Dr. Wallich remarks:—"This shrub is exceedingly elegant on account of its large round corymbs, which for eight months of the year are produced in a constant succession. The colour of the flowers is a pale-pink, gradually becoming reddish as they grow old, beautifully contrasting with the shining dark-green leaves, which are not unlike those of *I. Bandhuca*."

22. *I. stricta*.—A small woody shrub, three or four feet high, of erect growth, rather scanty both of stems and of foliage: leaves oval, smooth, about five or six inches long; bears, more particularly in March and April, large, very compact, convex corymbs of flowers of a scarlet-salmon colour, the exquisite beauty of which nothing can excel. Dr. Roxburgh, however, remarks that "it is by no means so gaudy as *I. coccinea* and *I. Bandhuca*, which are certainly two of our most showy Indian shrubs." In my opinion *Bandhuca* will not for a moment bear comparison with it. The pallid sickly hue of the foliage often much detracts from its beauty, and the stems of plants of any age have mostly a cankered, unhealthy appearance, as though the climate did not altogether suit it.

23. *I. undulata*.—*Páluk-jooee*.—A large ramous shrub, with large lanceolate, wavy leaves; bears in April corymbs of numerous small white flowers, having a powerful jasmine fragrance.

24. *I. villosa*.—A large shrub, with large, lanceolate, wavy leaves, as much as ten inches long; bears in April large corymbs of white, fragrant flowers, with very long tubes and very small limbs.

25. *I. floribunda*.—A new and remarkably distinct species lately introduced into the gardens about Calcutta; a dwarf, bushy pot-shrub, about a foot and a half high, with small smooth, lanceolate leaves, hardly two inches long; bears during the Hot and Rain seasons neat dense trusses of bright-scarlet flowers: extremely beautiful, particularly in April, when it is perfectly loaded with blossom. Propagated by cuttings with not much difficulty.

To the foregoing have of late been added: *amabilis*, *Amboinensis*, *affinis*, and *Dixiana* (see p. 598).

#### Chiococca.

*C. racemosa*.—SNOWBERRY.—A small shrub, though somewhat graceful, of no great merit; bears, in May and during the Hot season, pale-yellow, small, inconspicuous flowers in great abundance.

#### Pæderia.

*P. fœtida*.—A remarkably pretty, slender, and extensively-growing climber, bearing, in October, drooping festoons of small bell-flowers, purple varied with white, emitting a smell so abominable as to create a perfect stench in the neighbourhood around.

#### Hamiltonia.

1. *H. azurea*.—A large shrub with slender branches, apt soon to become straggling, decrepit, and unsightly, and needing therefore to be well cut in every year to keep it neat and in form; bears in December great plume-like heads of very small but very bright and numerous lavender-coloured flowers, which emit for some distance around a most delightful fragrance. Easily propagated by cuttings.

2. *H. suaveolens*.—A large stout shrub, somewhat similar to

the preceding, but with flowers which are nearly white, and leaves of much larger character; blossoms in February with deliciously-fragrant flowers, and continues for a long time a delightful ornament to the garden. Vastly improved by being well cut in after flowering.

#### Leptodermis.

*L. lanceolata*.—A small shrub; bears, in September, small lavender flowers of little beauty.

#### Hamelia.

1. *H. patens*.—A tree-shrub of dense rich-green foliage; ornamental for its boundless profusion of sprays of orange-coloured blossoms, upon which numerous humming-birds are from morning to night for ever hopping, and inserting their little beaks into each of the short pipe-like flowers to extract the nectar. The sprays of flowers are intermingled with bunches of pea-sized, blood-coloured berries, which, however, seldom ripen but in the Cold weather, when they turn black. No plant is more easily propagated either by cuttings or by seed.

2. *H. sphærocarpa*.—A shrub of lower growth, stouter stems, with larger and more showy orange-coloured blossoms, and with rich verdant leaves, much larger and thicker than those of the preceding; the name assigned is apparently a misnomer, as the fruits are egg-formed, and not at all spherical. This species drops its leaves in the Cold season, and the branches, at that time bare, are benefited by being cut in.

#### Pentas.

*P. carneae*.—A small herbaceous shrub, very common, but a truly beautiful plant; bears, in constant succession, Ixora-like heads of rather small, pale-lavender-coloured flowers. Easily propagated either by slips or by seed.

#### Wendlandia.

1. *W. paniculata*.—A rather large woody shrub or small tree; bears in February, in great profusion, splendid large plumes of

small pure-white flowers, and is then a most beautiful object to view.

*R. exserta*.—Dr. Roxburgh speaks in highest praise of the beauty of this plant; but I have been unable to learn of its existence, or indeed of any particulars concerning it, in the Calcutta Botanical Gardens.

#### Rondeletia.

*R. punicea*.—A small hard-wooded shrub about three feet high; one of the commonest, and at the same time one of the handsomest ornaments of our gardens; bears in constant succession, through the Hot and Rain seasons, compact moderate-sized trusses of beautiful orange-scarlet blossoms, somewhat like miniature heads of *Auricula*: these, as they decay, should be removed, otherwise they remain a very long time on the plant, giving it a dirty unsightly appearance. Propagated by layers; these should be put down in the Rains, and will take three or four months before ready for removal. Bears seed also, but rather scantily, in the Cold season, which some little care must be taken to secure. The best plan is to search for the berries before ripe, and tie them up in fine linen, so that on ripening, when they open and discharge their seed, it may not be lost.

#### Rogiera.

*R. thyrsiflora*.—Lately introduced; of a genus of shrubs described as with oval soft-haired leaves, and bearing dense corymbs of small salver-shaped, rose-coloured flowers.

#### Portlandia.

*P. grandiflora*.—WHITE HORSE.—Native of Jamaica, where it is common among rocks. Of this truly noble and choice shrub plants may be sometimes seen in Calcutta among the collections of the curious; three or four are to be met with in the Calcutta Botanical Gardens, which continue constantly in blossom, except during the Cold season, from which, if not sheltered, they seem rather to suffer. The character of the foliage is very handsome, of a fine rich glossy green, contrasting well with the flowers, which are as much as five inches long, resemble those of the

white Lily, and diffuse during the night the same delicious fragrance. Propagated without much difficulty during the Rains by cuttings in sand.

#### Manettia.

*M. cordifolia*.—A small plant, with slender climbing stems; requires the support of a light trellis: grown in a pot, a beautiful ornament for the verandah during the Hot and Rain seasons, when it bears in profusion its moderate-sized tubular, bright-scarlet flowers. Propagated by separation of the roots, which are of a tuberous nature; bears in the Cold months cucumber-like pods of seed.

#### Catesbaea.

*C. spinosa*—SPINOSUS LILY-THORN.—A shrub of moderate size, with myrtle-sized leaves; covered with large sharp thorns, hardly to be called ornamental, though when in blossom, as it is at intervals during the Hot and Rain seasons, curious for the strange way in which the flowers hang from it without seeming to belong to it; they are of the size and form of a large tin extinguisher, of a pale livid-green, with the mouth part cut into great notches: said to bear “a yellow berry of the size of a middling plum;” but this I have never seen. Propagated by cuttings.

#### Higginsia.

*H. Ghiesbreghtii*.—A new shrub, from N. Grenada, said to bear yellow and red flowers.

#### Stylocoryne.

*S. Weberi*.—A moderate-sized shrub, with lanceolate, polished, leathery leaves, three-and-a-half inches long; bears, in January and February, Ixora-like corymbs of greenish-white flowers, which emit a delightful fragrance; thrives best under shade.

#### Rhodostoma.

*R. gardenioides*.—An ornamental small shrub, about two feet high, with neat and pleasing foliage; bears, in March and April,

Ixora-like trusses of tubular, milk-white flowers, which would be very handsome if all in the truss opened at the same time instead of only a few in succession.

### Gardenia.

1. *G. florida*—CAPE JASMINE—*Gundha-rāj*.—Native of China, but common in the gardens of India: a most delightful shrub, with neat handsome glossy foliage; leaves obovate, about an inch-and-a-half long; bears in March and April large very double, cream-white, sweetly fragrant flowers, having much the appearance, though not the regularity of petals, of a small Camellia; grows to six or eight feet high, but may be kept to any small and convenient size by pruning. Propagated by cuttings.

Two fine varieties of this charming shrub were introduced into the Gardens of the Agri-Horticultural Society some years ago by Mr. Fortune from China, and are called by his name.

a. Distinguished by its much larger character of foliage, the leaves being full three-and-a-half inches long, and by producing much finer flowers.

β. A superb variety with very large leaves and very double flowers, of immense size, fully four inches across. This blossoms somewhat later in the season. Mr. Fortune says that in China it grows to ten or twelve feet in circumference. The following description of it has also been given:—"Flowers four inches in diameter, pure-white, changing to buff, not unlike a large double Camellia. It is one of the very finest shrubs in cultivation, and ranks on a level with the double-white Camellia, which it equals in the beauty of the flowers and leaves, and infinitely excels in its delicious odour." \*

2. *G. lucida*.—A large shrub, or rather small tree, with rich noble foliage, the leaves being of a bright shining olive-green, firm, oval, and about six or seven inches long; bears at intervals during the Hot and Rain seasons large handsome solitary fragrant white flowers, three or more inches across; blossoms beautifully in a dwarf condition, in which state it may easily be kept by pruning.

\* 'Botanical Register for 1846,' p. 48, extracted from 'Journal of the Horticultural Society.'

3. *G. radicans*.—A shrub, native of Japan; bears during the Hot season very fragrant white flowers.

4. *G. latifolia*—*Pâprâ*.—A small tree of noble foliage, with leaves some as much as fifteen inches long, and six inches wide; bears large fragrant, white, nine to eleven-lobed flowers. Dr. Roxburgh speaks in great admiration of the beauty of this tree.

5. *G. ferox*.—A stout woody shrub, about four feet high; bears in May, when all but leafless, close groups of large, double, ill-shaped, white flowers, which soon decay and look unsightly, and are succeeded by fruit-pods of the size of a walnut. Though once in some esteem, not in any respect an ornamental plant.

6. *G. dumetorum*.—A tree of moderate size, bears in May very numerous small white flowers. Of no value in an ornamental point of view.

7. *G. Devoniensis*.—Native of West Africa. In Mr. Grote's garden at Alipore was a shrub of this noble plant four-and-a-half feet high, where it flowered in April; described as bearing most beautiful flowers, very similar to those of the White Lily, with a slender tube.

8. *G. Stanleyana*.—From Sierra Leone; described as a handsome shrub, with numerous spreading boughs, and large oval, wavy, bright-green leaves; bears numerous solitary great flowers with tube and interior of throat purple, and pure white limb; delightfully fragrant.

9. *G. citriodora*.—From Natal; described as a shrub about two feet high, having pointed, smooth leaves, and bearing numerous white flowers, having the form and perfume of those of the Orange. These two last species are of recent introduction.

#### Oxyanthus.

• 0. *hirsutus*.—A small bush about two feet in height; bears in July white fragrant flowers of a star-shaped limb, and tube six inches long.

#### Mussænda.

A genus of rather large shrubs, with dense foliage of moderate-sized, oval, deep dull-green leaves. In a decorative point of view there is very little difference between the species; during the Hot and Rain seasons they are nearly always in blossom, bearing numerous corymbs of star-formed, orange-coloured flowers.

From the calyces of one or two flowers in each corymb are developed large hoary-white leaves, which, contrasting with the green of the leaves, constitute principally the ornamental character of the plants. Propagated by cuttings or by seed, which they bear abundantly.

- 1. *M. frondosa*.—This, which has the largest flowers of any, being about an inch across, and orange-scarlet, is perhaps the most desirable one of the species.
- 2. *M. macrophylla*.—Has flowers about half the size of the last, and of deeper colour.
- 3. *M. corymbosa*.—Has flowers much smaller still, of a pale-orange colour.
- 4. *M. latifolia*.
- 5. *M. luteola*.

## CAPRIFOLIACEÆ.

### Weigela.

*W. rosea*.—A shrub like the *Philadelphus* or Mock Orange; bears at the end of every little side-branch loose clusters of white and rose-coloured flowers, more than an inch long, and an inch-and-a-half wide; much cultivated for its beauty in the gardens of the mandarins in China, and now a very common ornament in the gardens in England; introduced by Mr. Fortune some years ago into the Gardens of the Agri-Horticultural Society, but seemed quite unsuited to the climate, as the plants soon showed symptoms of decay, and before long perished.

### Lonicera.

1. *L. Japonica*—JAPAN HONEYSUCKLE.—A very rambling shrub, requiring the support of a trellis or some stout posts; leaves oval, two inches long, dull whitish-green; bears at intervals, and nearly at all seasons, but principally in the Cold weather, white and yellow, strongly fragrant flowers; a very common plant, met with in most Indian gardens.

2. *L. Periclymenum*.—A small shrub, so named in the Calcutta Botanical Gardens but in no way resembling the common Honey-suckle of the English gardens; a not very thriving plant, with oval leaves about, an inch long, deep-green above, and hoary on the under-surface; never, that I have seen, flowering here.

3. *L. diversifolia*.—A straggling, weedy-looking shrub, native

of the hills of India ; two or three plants in pots are met with in the Calcutta Botanical Gardens that have not yet flowered there ; flowers described as being " of a pale-buff colour, and stalkless."

4. *L. sempervirens*—TRUMPET HONEYSUCKLE.—A very beautiful plant when in blossom with its scarlet scentless flowers : a common ornament of English gardens ; set down by Dr. Voigt in his Catalogue as existing and blooming here. I have never met with or heard of it ; neither have I the two following, likewise mentioned by him :—5. *L. macrantha*.—Native of Nepâl. 6. *L. Leschenaultii*.—Native of the Nilgherries.

7. *L. reticulata*.—Native of Yeddo, a twining plant, ornamental for its foliage of small oval leaves of a deep-green colour, beautifully netted with cream-coloured reticulations. In Mr. Grote's garden at Alipore I saw a fine specimen grown in a pot, which had become quite a small shrub. I learnt that it sheds its leaves during the Cold season.

#### **Abelia.**

A. *triflora*.—Native of the Himalayas ; a scandent shrub ; bears in great profusion dense ball-like heads of small white, very fragrant flowers. Introduced into the Botanical Gardens, but I know not with what success.

#### **Viburnum.**

1. *V. dilatatum*.—Described by Mr. Fortune as " a fine new Gueldre's Rose ;" and 2. *V. macrocephalum*, introduced by him, some years ago from China into the Gardens of the Agri-Horticultural Society ; both perished, seemingly unsuited to the climate.

#### **APIACEÆ.**

Not a single plant of this extensive order contributes to the embellishment of our gardens in India.

#### **ARALIACEÆ.**

The few plants of this Order suited for the garden are ora-

mental solely for their foliage, not bearing flowers worthy of notice.

#### Panax.

1. *P. cochleatum*.—A small shrub with bright dark-green foliage, the leaves in form resembling shallow sauce-lades.

2. *P. fruticosum*.—A small shrub, rather ornamental for its dense finely split foliage, a sprig of which forms a pretty addition to a bouquet.

#### Aralia.

**A. papyrifera**—RICE-PAPER PLANT.—A shrub bearing resemblance to the Castor-oil plant, except that the leaves have a hoary-white appearance; introduced into this country by Mr. Fortune; bears in the Cold season large mealy-looking heads of small white flowers. The flower-stems die down after flowering, and the pith they contain is the true rice-paper of the Chinese. It is in this that the interest of the plant consists, rather than in any ornamental character it possesses. Propagated by the suckers it sends up for some distance around, as well as by seed, which it produces abundantly.

#### Hedera.

**H. Helix**—COMMON IVY.—Manages to exist as a small pot-plant, but makes no growth, and except for association is unworthy a place in the garden.

### CORNACEÆ.

#### Aucuba.

**Au. Japonica**.—This fine mottle-leaved shrub, so familiar in English gardens, can only with great difficulty be kept alive here. A specimen or two in a small pot is all that I have seen of it in this country.

### SANTALACEÆ.

#### Santalum.

**S. album**—SANDAL-WOOD-TREE — *Chundun*.—A small tree,  
2 Q

native of the jungles of India; possesses no merit sufficient to entitle it to a place in the garden.

**ARISTOLOCHIACEÆ.**  
**BIRTHWORT—PELICAN-FLOWER.**

*Aristolochia.*

Several of these plants bear flowers of a most curious and indescribable form. I give the most interesting:—

1. *A. labiosa*.—A common and very extensive large-leaved climber, requiring a stout trellis for its support; bears, in the Hot season, large flowers, somewhat resembling an inflated bag below with a helmet above, yellowish-white blotched with brown and purple; emitting a most offensive smell, like that of tainted meat.
2. *A. Brasiliensis*.—A large climber, with largish heart-shaped leaves; bears yellowish flowers.
3. *A. acuminata*.—A native of Bengal; blossoms in the Hot and Rain seasons with large, drooping, dark greenish-purple flowers.
4. *A. caudata*.—A small climbing plant, about three feet high, with slender stems and bluntly three-lobed leaves; bears in the Cold season curious liver-coloured flowers, letting hang down from their summit a tail or thread-like appendage two feet long; commonly grown in a pot, and well suited for its singularity for a place in the verandah.

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The following plants, not noticed in the foregoing pages, are among those which, while this work has been going through the press, have been announced for distribution by the Agricultural Society from their new garden at Alipore. The general character of most of these may in a great measure be ascertained by reference to the descriptions of the natural orders and genera to which they belong, given in the body of the book. Some are unquestionably of great beauty, and valuable acquisitions to the garden; but some, it is possible, may be considered of little merit; and others be found unsuited to the climate.

**POLYPODIACEÆ.—FERNS.**

*Adiantum*—*caudatum*; *fulvum*; and *Farleyense*, described as a

splendid Maiden-hair fern: with large pendent, much divided fronds, growing to upwards of three feet in length.

### GRAMINACEÆ.

Bambusa.—*arthrophylla*; *Balcona*; *gigantea*; *Maxemowiczii*.

### ARACEÆ.

Alocacia—*Sikimensis*; *zebrina*.

Caladium.—*argyrophyllum*; *Cannærtii*; *Houlcottii*; *Lepeschkinii*; *marmoratum*; *mirable*; *regale*; *Schmidtziæ*; *striatum*: *Verschaffeltii*. *Hybrid and varieties*: *Auguste Rivière*; *Barillet*; *Dr. Lindley*; *Duc de Nassau*; *Duc de Ratisbon*; *E. G. Henderson*; *Jules Patzays*; *Louise Porrier*; *Max Kroll*; *Mrs. Dombrain*; *Murillo*; *Napoleon III.*; *Prince Albert Edward*; *Princess Alexandra*; *Princess of Teck*; *Reine Victoria*.

Dieffenbachia.—*Bausei*; *Bowmanii*; *lineata*; *Weiri*.

Aglaonema.—*commutatum*.

Philodendron.—*pertusum*; *scandens*.

### PANDANACEÆ.

Pandanus.—*inermis*; *Javanicus variegatus*; *Lerum*.

### PALMACEÆ.—PALMS.

Hyophorbe.—*Verschaffeltii*, described as a superb plant.

Euterpe.—Sp.

Oreodoxa.—*acuminata*.

Arecæ.—*disticha*; *gracilis*; *horrida*; *Madagascariensis*; *triandra*.

Seaforthia.—*elegans*; sp. Andamans.

Latania.—*glaucophylla*; *Borbonica*.

Corypha.—*Australis*; *Tabiera*.

Livistona.—*Hoogendorpi*; *Sinensis*.

Licuala.—*spinosa*:

Sabal.—*Adansoni*; *minor*.

Chamærops.—*Fortunei*.

Rhapis.—*flabelliformis*; Ground Rattan Palm.

Plectocomia.—*Assamica*.

Thrinax.—*glaucia*; Thatoh-Palm.

Phœnix.—*paludosa*; *rubricaulis*.

Desmoncus.—*major*.

### HYPOXIDACEÆ.

*Curculigo*.—*Sumatrana*; and *recurvata variegata*, described by Mr. B. S. Williams as a very elegant Palm-like plant; leaves more than two feet long, green, with numerous bands of pure white.

### IRIDACEÆ.

*Iris*.—*Iberica*.—This plant has, I believe, much of the character and constitution of *I. Susiana*. Mr. T. Ware says of it: “Its dwarf habit, gigantic flowers, great snow-white erect sepals, its equally large strangely-coloured petals, and its stigmas with shining black-purple humped bases (the latter organs resembling some monstrous insect), make up a flower of singular oddity, and yet of such remarkable beauty, that few can form any possible idea of this wonderful plant.”

### MARANTACEÆ.

*Maranta*.—*atrosanguinea*; *Lindenii*; *virginalis*. *Canna*.—*Annei discolor*; *Bonetti semperflorens*; *Bergiana*; *bicolor de Java*; *Bihoreli*; *Caledoniensis*; *Chantini*; *discolor floribunda*; *elegansissima*; *erecta hybrida*; *expansa*; *Ferrandii*; *Fintelmanni*; *maxima*; *metalloides*; *metallica*; *nigricans*; *Van Houttei*; *vitata*; *zebrina coccinea*, and *Auguste Ferrier*; *Daniel Hooibrenk*; *géant*; *Marshal Vaillant*; *Premice de Nice*.

### COMMELYNACEÆ.

*Aneilema*.—*nudiflora*.

### LILIACEÆ.

*Gasteria*.—(*Aloe*) *Bowieana*.

*Aspidistra*.—*punctata*, described as a curious plant, remarkable for producing its flowers under the surface of the earth.

### BEGONIACEÆ.

*Begonia*.—*Anacreon*; *Caroline*; *Chimax*; *Dazzle*; *Ensign*; *Gem*; *Glitter*; *Hermine*; *Lothair*; *lucida*; *Magnet*; *Trojan*.

### VIOLACEÆ.

*Corynostilis*.—*albiflorus*: a climbing shrub.

### MALVACEÆ.

*Thespesia*.—*populnea*: Umbrella Tree:—described as a lofty tree, bearing large yellow flowers with purple spot in centre of the petals; well adapted for forming shady avenues.

### VITACEÆ.

*Cissus*.—*argentea*; *Bonplandi*; *quadrangularis*.

### MELIACEÆ.

*Amoora*.—Rohituka.

### AMARANTACEÆ.

*Alternanthera*.—Herbaceous plants, with coloured leaves; *amabilis*; *discolor*; *paronychoides*; *spathulata*.

### PIPERACEÆ.—PEPPERS.

*Piper*.—*magnolifolium*; *marmoratum*; *Verschaffeltii*.

### FABACEÆ.

*Brownnea*.—*Antiguensis*.

*Adenanthera*.—*pavoniana*: a tall tree bearing spikes of small yellow flowers.

### ROSACEÆ.

*Rosa*.—Roses: A list of as many as 115 different kinds of Roses is given. This, while omitting several long-established and familiar roses of the country, comprises many of the recent and finest kinds, but contains likewise many which, though fine, have been superseded by others still finer, and find no longer a place in the Rose-grower's list of the present day; some, for instance, such as *Abdel-Kadir* and *Belle de Massifs*, are of very secondary merit, and are quite discarded.

### OLEACEÆ.

*Osmanthus*.—*ilicifolius*; a neat shrub with Holly-like leaves.

### SOLANACEÆ.

*Solanum*.—*ciliatum*.

## GESNERACEÆ.

*Gesnera*.—*amabilis*; *citrina rosea*; *insignis*; *Lindleyana*; *roseo punctata tubiflora*: also *Ada*; *Madame A. Lacombe*; *Morgenlicht*; *Nikets*; *Octavia*; *Rosalie*; *Sceptre Corail*; *Zonnendaal*.

*Achimenes*.—*grandiflora*; *grandis*; *tubiflora*; *Williamsii*. Also *Cherub*; *Dazzle*; *Diamond*; *Estella*; *Excelsior*; *Georgiana*; *Leopard*; *Masterpiece*; *Martha*; *Oberon*; *Pink Perfection*; *Rose Queen*.

*Gloxinia*.—*Acton Green*; *Advancor*; *Fassinux*; *Fénélon*; *Goethe*; *Grand à Paris*; *John Groug*; *Lamartine*; *Laura*; *Madame Gustave Guilmot*; *Montfort*; *Schiller*.

## BIGNONIACEÆ.

*Bignonia*.—*picta*; *Roeziana*.

## ACANTHACEÆ.

*Meyenia*.—*Vogeliana*.

*Sericographis*.—*Ghiesbrechtiana*; *squarrosa*.

*Hypoestes*.—*Dixiana*; *purpurea*.

*Libonia*.—*Penrhosiensis*.

## CACTACEÆ.

*Echinopsis*.—*leucotricha*; *intermedia*; *oxygona*; *Zuccariniana*: produce large handsome flowers.

## CINCHONACEÆ.

*Ixora*.—*amabilis*, which Mr. B. S. Williams describes as a vigorous-growing hybrid, bearing freely large terminal corymbs of deep salmon, orange-shaded flowers.

## ARALIACEÆ.

*Aralia*.—*Guilfoylei*. Mr. B. S. Williams says: "A very distinct species, with large pinnate leaves, leaflets light green, margined with pure white."

# INDEX TO ENGLISH NAMES OF PLANTS;

AND

## GENERAL INDEX.

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OF

## CLASSES, ORDERS, GENERA, AND SPECIES.

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